প্রাগজ্যোতিষ মহাবিদ্যালয়

PRAGJYOTISH COLLEGE

Estd. 1954

Accredited by NAAC since 2004 (3rd Cycle); Recognised under sections 2(f) and 12(B) of UGC
Affiliated to Gauhati University; ISO 9001:2015 Certified; SDG Accord Certified

DVV Clarification

CRITERIA VII

METRIC 7.1.3

GREEN AUDIT REPORTS

Submitted to

THE NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

Dr. Manoj Kumar Mahanta
PRINCIPAL

PRAGJYOTISH COLLEGE

[ESTD: 1954; NAAC ACCREDITED (2004-09, 2011-16, 2021-26); RECOGNISED UNDER SECTIONS 2(f) AND 12(B) OF UGC]

GUWAHATI – 781009, ASSAM, INDIA
https://pragjyotishcollege.ac.in/

DECLARATION

I hereby declare that the data furnished and the documents submitted with regard to Green and Environment Audit Report are true and authentic to the best of my knowledge and belief.

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GREEN AUDIT REPORT

2018-19

PRAGJYOTISH COLLEGE, GUWAHATI, ASSAM

Prepared By
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অধ্যাপক হৰি প্ৰসাদ শৰ্মা
মুৰব্বী
Prof. Hari Prasad Sarma
Head(i/c)

Ref.....

Date.....14.09.2019.....

CERTIFICATE

This is to certify that the Green Audit of Pragjyotish College, Guwahati has been carried out by the Department of Environmental Science, Gauhati University, Guwahati-14 under my supervision and guidance. This work was carried out within a very short period of time and with limited resources and therefore there remains more to be investigated for a comprehensive Green Audit of the College.

I offer my best wishes to the college in its pursuit for excellence in higher education and all its future endeavours.

(Prof. Hari Prasad Sarma)

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PREFACE

Green Audit in the Institutions of Higher Educations (IHEs) is nowadays considered to be a very important aspect of self-assessment within the framework of National Assessment Accreditation (NAAC) process. In fact, NAAC has made it mandatory for colleges and universities to submit the Green Audit report (Criteria 7). Further, raising concerns about the degrading quality of natural environment and imbibing the values of environment is a natural outcome of the teaching-learning process in IHEs. Therefore, it becomes imperative that all such institutes should carry out a self-inquiry/assessment with regards to its contribution towards environmental sustainability. Green Audit is a method of such self-inquiry which has been adopted by various colleges and Universities throughout India.

Pragjyotish College, in its pursuit for maintaining and improving the wholesome environmental quality of its campus, has taken up an initiative of carrying out a self-assessment through Green Audit with the following objectives: (1) To establish a baseline of existing environmental conditions (2) To document the best practices already adopted by the college to achieve environmental sustainability (3) To promote environmental awareness through the participatory auditing process and (4) To generate a report based on the auditing process that would contain the baseline environmental data, best practices with regards to pollution control, waste management, energy conservation, biodiversity conservation and also the future strategies for achieving environmental sustainability.

The college authority in order to maintain transparency and avoid self-biasness had decided to entrust the Department of Environmental Science, Gauhati University as an external expert agency to carry out the green audit of the college.

In absence of a standardized model of Green Audit of Institute of Higher Education (IHEs) in the State of Assam, the Department of Environmental Science, Gauhati University decided to carry out a rapid assessment through questionnaire method and standard field cum laboratory based environmental analytical methods.

The Green Audit assessment team collected most of the data with the help of students, teachers and officials of the college. The field based environmental analyses were carried out with standardized portable monitoring kits available with the Department of Environmental Science, Gauhati University. Laboratory investigations were also carried out in the same department following standard methods. Based on the database generated, the audit team has recommended some short term and long term suggestive measures which would be instrumental in improving the overall environmental quality of the Pragjyotish College campus.

It is hoped that this report will receive due attention of all the stakeholders of the college and shall help in bringing about a paradigm shift in the administrative policy of the college which will ultimately lead to environmental sustainability.

Prof. Hari Prasad Sarma

GREEN AUDIT

PRAGJYOTISH COLLEGE, GUWAHATI, ASSAM

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CONTENTS

1. INTRODUCTION

Pragjyotish College is located at the southern bank of the mighty river Brahmaputra within the Guwahati metropolitan area and towards the northern edge of the Shillong plateau. It is one of the oldest undergraduate, co-educational colleges in Assam, established in 1954 and affiliated to Gauhati University. The main campus of the college spreads over an area of 7.35 acres as per land record.

The college campus has a good percentage of green cover and harbours several medicinal trees and edible fruit plants. Apart from that there are also two water bodies that provide a good environmental landscape to the institution. Presently, the college boasts of 31 Departments imparting 28 Programmes at Undergraduate level and 3 Masters level programmes. The college has 110 numbers of teaching faculty and 58 numbers of non-teaching staff with a strength of approximately 2,935 (PG:190; UG:2745) students. The college also has a hostel for the female students.

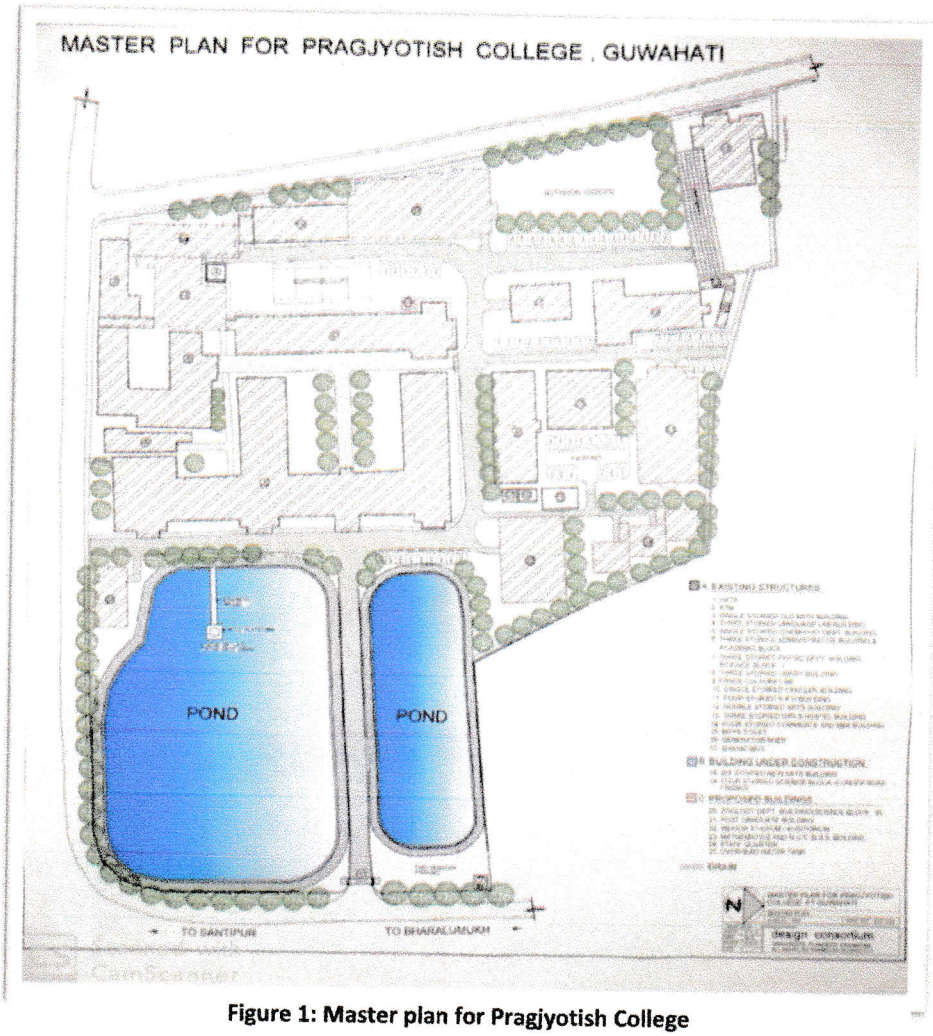

Figure 1: Master plan for Pragjyotish College

2. LANDUSE

Pragjyotish College has a total land holding of 7.35 acre of which approximately 2.09 acre is classified as water bodies and approximately 1.46 acre of the total area is under green cover. The presence of flower garden and the Orchid house covering an area of 0.15 acre inside the campus augments the aesthetic value of the college. A brief note on the built-up environment (Table1) of the college is provided below:

a. Built-up environment:

The total built-up area is approximately 1.96 acre out of the total 7.35 acre of the campus. Both Assam type and multi-storied RCC constructions are found within the campus. Another important feature of the college campus is the aquaculture and orchid house. The waterbodies inside the college campus covering an area of about 2.09 acre provide support in maintaining a good ecological habitat for a wide variety of flora & fauna which are listed in the Table 2 & 3.

Figure 2: Panoramic pictures of Pragjyotish College campus

Also one orchid house, maintained by Department of Botany of the college, harbours more than 20 species of orchids.

Table 1: Summary of land use/land cover of college campus

Land use category	Type	Number	Area (acre)	% of Total land area (acre)
Built-up land	Single storied academic building	2	1.96	27
	Single storied canteen building	1		
	Two storied academic building	1		
	Three storied academic building	4		
	Three storied girls hostel building	1		
	Four storied academic building	2		
	Four storied academic building Under construction	1		
	Six storied academic building Under construction	1		
Green cover	Flower garden		1.46	20
	Plantation areas			
Water bodies	Ponds and wetland	3	2.09	28
Roads	Gravel roads		0.46	6
	Katcha Roads		0.38	5
Unutilized lands			0.94	13
Drains			0.06	1
		Total Area	7.35	100

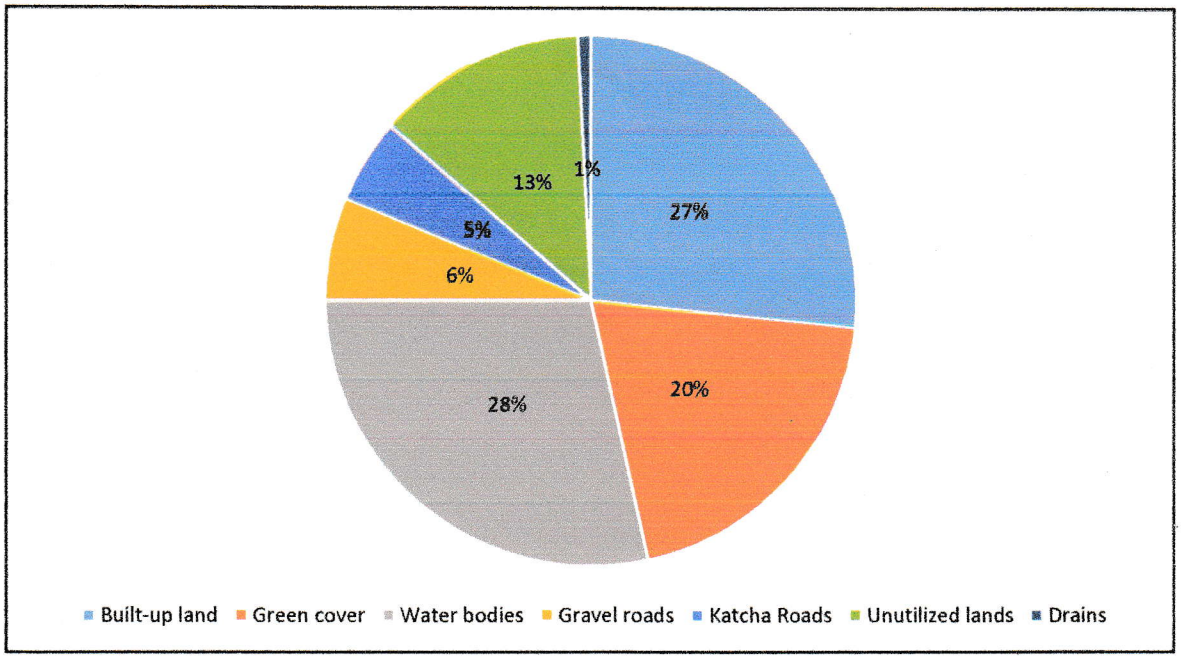

Figure 3: Percentage distribution of different categories of Landuse

3. CAMPUS BIODIVERSITY

The natural landscape of Pragjyotish college campus includes green vegetation covers, botanical Garden, open water bodies and marshy land which provides a unique environmental setting conducive for a wide range of floral and faunal diversity. This includes species belonging to mammalian, avian, herpeto-faunal and invertebrate groups. From the data collected from the college authority and team observations, it has been found that atleast 6 species of mammals & 11 species of birds are found within the campus. Apart from these, 11 species belonging to herpeto-fauna, 10 species of butterfly have been reported earlier. There are 15 species of fishes distributed in the two ponds of the college.

Also, there are many invertebrate species belonging to various orders which needs detailed survey. A summary of faunal diversity is listed below in Table 2:

Table 2: Summary of faunal diversity in Pragjyotish college campus

Sl. No.	Type of fauna	Number of species	Name of Species
1	Mammal	06	*Macaca mulatta*
			Herpestes javanicus
			Rattus sp.
			Pteropus giganteus
			Funambulus palmarum
			Pipistrellus coromandra
2	Bird	11	*Bubulcus ibis*
			Ardeola grayii
			L. javanicus
			Eudynamys scolopacea
			Cuculus micropterus
			Upupa epops
			O. oriolus
			Dicrurus macrocercus
			Acridotheres tristis
			Corvus splendens
			Passer domesticus
3	Amphibian	03	*Bufo melanostictus*
			Rana tytleri
			Euphlyctis cyanophlyctis
4	Snake	06	*Naja Kaouthia*
			Bungarus fasciatus
			Enhydris enhydris
			Ptyas mucosa
			Lycodon aulicus
			Ahaetula nasutus

5	Lizard	02	*Sphenomorphus macculatus*
			Eutropis carinata
6	Butterfly	10	*Hasora badra*
			Badamia exclamationis
			Matapa aria
			G. doson
			D. eucharis
			Catopsila Pomona
			Eurema hecabe
			Ypthima baldus
			Y. hubenri
			A. merione
7	Spider	03	*Argiope pulchella*
			Phintella vittata
			Nephilia pilipes
8	Fish	15	*Catla catla*
			Amphipnous cuchia
			Anabus testudineus
			Channa punctata
			Cirrhina mrigala
			Glossogobius giuris
			Heteropneustes fossilis
			Mystus vittatus
			Mystus cavasius
			Labeo gonius
			Colisa lalius
			Channa striatus
			Danio rerio
			Rasbora bonensis

The college campus though has a small area, yet it boasts of 54 numbers of species of plants. Among these, there are several medicinal and edible fruit plants. A list of plant species is given below in table:

Table 3: Summary of floral diversity in Pragjyotish college campus

Sl No.	Common names	Botanical names
1.	Guava	*Psidium guajava L.*
2.	Papaya	*Caricapaya l.*
3.	Weeping bottle brush	*Callistemon citrinus(Curtis)Stapff*
4.	Eucalyptus	*Eucalyptus maculate Hook*
5.	Mango	*Mangifera indicaL.*
6.	Sisso	*Dalbergia sisoo Roxb.*
7.	Champa	*Michelia champaka*
8.	Arjuna	*Terminalia arjuna (DC) W.& a.*

9.	Kadam	*Anthocephalus cadamba Miq.*
10.	Neem	*Azadirecta indica A.Juss*
11.	Krishnachura	*Delonix regia(Borjr.) Rof.*
12.	Peepal	*Ficus religiosa L.*
13.	Gamari	*Gmmelina arborea Roxb.*
14.	Moj	*Pithecellobium monadelphum kosterm*
15.	Bhomra	*Terminalia bellirica Roxb.*
16.	Thuja	*Thuja occidentalis*
17.	Rangal	*Ixora*
18.	Acacia	*Acacia auriculformis A.Cunn.ex.Benth*
19.	Copper pod	*Peltophorum pterocarpum*
20.	Khajur	*Phoenix silvetris*
21.	Musanda	*Canis lupus*
22.	Kathal	*Artocarpus heterophyllus Lamk.*
23.	Sewali	*Nyctanthus arbour-tristis L.*
24.	Bokul	*Minusops elengi Roxb.*
25.	Chatiana	*Alstoni scholaris L.*
26.	Silikha	*Terminalia chebula Terz.*
27.	Boga jam	*Syzygium kurzi (Duthie)Black*
28.	Jam	*Syzygium cumin(L.) Skeels*
29.	Dung	*Dillenia indica*
30.	Cyas	*Cycas pectinate Griff.*
31.	Ratka Joba	*Hibiscus-rosa sinensis L.*
32.	Sthallapadma	*Hibiscus mutabilis L.*
33.	Bael	*Angel marmelos L.*
34.	Narasingha	*Murrya koengii Spreng*
35.	Kamini Kanchan	*Murrya paniculata(L.) Jack*
36.	Poma	*Toon ciliate M.Roem*
37.	Bogori	*Zizipus jujube Lamk.*
38.	Siris	*Samane saman(Jacq)Merr.*
39.	Kanchan	*Bauhinia purpurea L.*
40.	Radhachura	*Caesalpinia pulcherima(L.)*
41.	Xonaru	*Cassia fistula L.*
42.	Boga Gulap	*Rosa alba L.*
43.	Tagor	*Gardenia florida L.*
44.	Chegun	*Tectona grandis L.f*
45.	Silveroak	*Grevillea robusta R, Br.*
46.	Narikal	*Cocos nucifera L.*
47.	Momai Tamul	*Chrysalidocarpus lutescens*
48.	Xendur goch	*Bixa Orellana L.*
49.	Tamul	*Areca catechu L.*

50.	Odal	*Sterculia villosa Roxb.*
51.	Kathanda	*Coffea benghalensis Wall et.Roxb.*
52.	Koros	*Derris indica (Lamk) Bennet.*
53.	Kanchan	*Bauhinia accuminata L.*
54.	Marigold plant	*Calendula officilanis*

Apart from the above, the college fraternity actively taken up plantation drives in the last five years in and outside of the campus. However, such plantation programmes are confined to celebration of World Environment Day and other such special occasions. As such, the college can take up initiative of maintenance of planted tree saplings and conservation of other floral and faunal resources on a regular basis through the involvement of teachers, students and non-teaching staff of the college.

4. DRINKING WATER QUALITY

Table 4: Water quality data

Sample Sites	Sample ID	pH	TDS (ppm)	Temp (°C)	ORP (mV)	Conductivity (µs)	Salinity (ppm)	Total Hardness (mg/L)
Aquaguard Near Library	S-1	6.29	398.5	25.2	-	397.6	392.5	194
Boring (Zeolite Exchanger)	S-2	6.17	464.0	25.6	160.8	463.3	460.1	243
Tapwater (Boring)	S-3	6.08	264.4	26.6	-	264.1	259.5	126
Tapwater (Boring)	S-4	6.65	304.6	24.8	190	304.1	300.2	144

Sample Source	Sample ID	Fe (ppm)	PO_4^{3-} (ppm)	NO_3^- (ppm)	SO_4^{2-} (ppm)	F^- (ppm)
Aquaguard	S-1	1.44	BDL	1.20	16.68	BDL
Boring (Zeolite Exchanger)	S-2	0.39	BDL	0.85	14.28	BDL
Tapwater (Boring)	S-3	1.93	BDL	BDL	21.99	BDL
Tapwater (Boring)	S-4	0.91	BDL	0.69	23.82	BDL

Drinking water within the college campus including Girls' hostel is supplied from 11 numbers of water reservoirs of having total capacity of 11,000 Litres. The source of water in the reservoirs is mainly groundwater extracted from deep bore wells using external and submersible water pumps. Water quality analyses were carried out on

sample collected from 4 numbers of sites (Table 4). The water quality analyses were carried out using 12 parameters (pH, TDS, Temperature, ORP, Conductivity, Salinity, Total Hardness, Fe, PO_4^{3-}, NO_3^-, SO_4^{2-} and F^-) and as per standard procedures prescribed by APHA (1984). Onsite measurements of some of the parameters were carried out using portable water analysis kit- EUTECH Cyber scan PCD650 model. Analysis of other parameters were carried out in the laboratory of the Department of Environmental Science, Gauhati University. All the parameters that were analyzed were found to be within the permissible limits as recommended by World Health Organization(WHO).

5. WATER USE AND CONSERVATION

The college campus has a total of 11 numbers of water reservoirs which can store a total amount of 11,000 litres of water as depicted below:

Table 5: Location and Size of Water reservoirs

Location	No. of storage tanks	Capacity (Litres)
Girls' hostel	3	3,000
Commerce building	2	2,000
RUSA building	1	1,000
Girls' common room	1	1,000
Heritage building	1	1,000
Administrative building	1	2,000
	Total	11,000

It has been observed that the college does not have rain water harvesting system. In absence of any rain water harvesting system, the entire quality of said volume of water is extracted from ground water aquifers. The conserve ground water it is important that the college authority should implement rainwater harvesting scheme in the campus. Further, this will also contribute towards reduction in electricity bill amount which is significantly contributed by daily the operation of water pumps.

6. AIR QUALITY

Table 6: Average monthly air quality data for the year May, 2018-April,2019

Para-meters (Units)	Monthly Average Data for 2018-19												Annual Average ($\mu g/m^3$)	CPCB Permissible Limits (Annual Average)
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March	April		
PM_{10} ($\mu g/m^3$)	67.96	75.33	60.45	64.58	59.91	109.41	102.14	133.45	172.58	207.49	127.21	100.59	**106.76**	60
SO_2 ($\mu g/m^3$)	12.33	8.9	5.79	6.84	6.4	5.54	6.95	8.04	8.04	8.49	5.83	7.705	7.51	50
NO_x ($\mu g/m^3$)	20.76	20.67	14.94	19.04	15.46	18.83	18.15	16.67	19.38	17.67	17.5	17.25	18.03	-

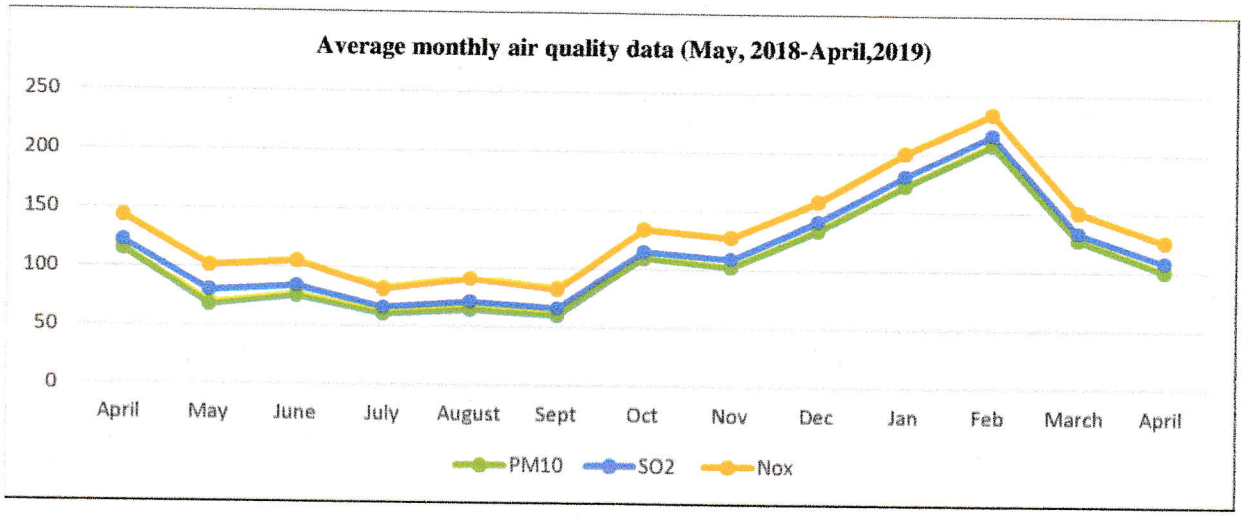

Figure 4 Monthly variation of air quality parameters

The continuous monthly air quality data were taken from NAMP station, Pragjyotish College under Central Pollution Control Board, Assam from 1 April,2018 to 30 April,2019. An average monthly data and graphical representation are given in Table 6 and Fig.3 respectively. The data collected from NAMP station, Pragjyotish college, PM_{10} shows higher level of annual average exposure level than the permissible limit according to the guidelines of CPCB. Both SO_2 and NO_X levels were found below the permissible limit. Highest concentration of PM_{10} has been found in the month of February. It is possibly due to temperature inversion that occurs during this month.

High density of vehicles and Indian railway trains tracks, dust from construction activities outside the college campus, and private vehicles of staff members inside the college campus during the peak college hours are the main source of air pollution within the campus. A holistic approach is required to improve the air quality on a priority basis.

7. AMBIENT NOISE LEVEL

The noise level measurements were carried out within the college at nine different sites. The entire campus can be classified as per CPCB norms and hence the daytime limit of L_{eq} is taken as 50db. Considering this and on carrying out the measurements, it has been found that except for Girls' hostel, all other sampling sites exceeded the limit. The measurements were carried out within 12 noon-4 pm and during the sampling period, student activities within the campus was not observed. Therefore, considering this fact, it can be safely assumed that the L_{eq} would be much higher than the recorded values if sampling is carried out during the peak hours of the day. The results also show that there is significant contribution from vehicles plying across the road adjacent to the campus. Therefore, adequate mitigations measures should be taken up to reduce the noise level owing to vehicles plying in the road. Also, steps should be taken up to reduce noise levels within the campus through implementation of prohibitory rules and application of noise damping structures

Table 7: Noise Levels in different categories of area in Pragjyotish College Campus
(as on 06.03.19)

Sl. No.	Site Name	Category of Area	Sound Pressure(dB)	L_{eq}	Day Time Limit of L_{eq}
1	Main gate entrance	Silence zone as per CPCB rules	59.1	66.2	50
2	Administrative and academic block		56.7	59.4	
3	Physics department and science block		54.2	58.5	
4	Girls' hostel building		35.6	48.6	
5	Boys' toilet		51.8	56.0	
6	New Arts building		47.6	51.1	
7	Zoology department		39.1	52.5	
8	Indoor stadium		46.5	54.7	
9	Mathematics department /NCC/NSS		50.1	56.0	

The College authority can implement strategies like "No Horn Day/ No Vehicle Day" in every month to promote the culture of use of public vehicle along with the reduction of both air and noise pollution.

8. WASTE MANAGEMENT

Through the audit it was found that the 26 academic departments together generated about 8.5 kg of solid waste per day which would amount to 221kgs/month (considering 26 working days/month). It was also reported that only two departments (Chemistry and Botany) had some sort of arrangements for segregation of biodegradable and non-biodegradable wastes. However, in the absence of such facility for the whole college, the department's initiative shall not be fruitful. The absence of dustbins in 5 departments were reported during questionnaire survey. Absence of the basic need of having dustbins in the immediate vicinity of workplace would lead to dirty and unhygienic conditions. The no. of dustbins to be provided to each department should be based on the number of people in the department and the kind of regular activities carried out in classes and laboratories. Chemistry and Physics department has reported generation of hazardous wastes and so such wastes must be disposed only as per the Govt. of India/MoEF rules. The college authority should take note of this and implement effective measures in this regard.

As informed the college has a tie up with the Guwahati Municipal Corporation (GMC) for disposal of waste generated in the college on daily basis. But as said earlier,

segregation of waste at source and thereafter its disposal should be given utmost priority. A very good initiative of the college authority is the installation of sanitary napkin vending and disposal machines within the campus. The college authority should have established a committee/ cell for monitoring the waste management and also should start the vermicomposting unit at the earliest.

9. CAMPUS CLEANLINESS

The College authority has maintained cleanliness throughout the college campus which has been observed by the audit team during its visit. During interaction with students and teachers and from the data provided it is learnt that the students and the other members of the fraternity has been actively taking part in cleanliness drives organized every year. Some of the major cleanliness drives were organized during the Swachhta Samaroh/Swachhta Pakhawada, Swach Bharat Abhiyan during the last two years which were primarily part of government initiatives. However, all these cleanliness drives were mobilized through NSS and NCC units of the college. Therefore, the audit team is of the view that the students, teachers and non-teaching staff members from different departments should be made part of such initiatives.

10. ENERGY REQUIREMENT AND MANAGEMENT

Pragjyotish College receives its power supply through the dedicated lines of Assam Power Distribution Company Ltd., Govt. of Assam apart from its own generation from solar installations. Presently the connected load for the college campus is about 80 KW. Considering the growth prospects of the college, there will be a significant increase in power bill over the present expenditure of approximately 9-10 Lakhs annually.

Through the energy audit, it has been observed that the college now relies mostly on incandescent lights for lighting of the various departments and establishments of the college. From the assessment it has been found that 78% of the lighting is carried out using incandescent lights. Only 09% of the lighting arrangement involves LED bulbs. Approximately 4.55 kWh of energy is consumed per day (i.e. approx.118.5 kWh/month) for lighting arrangements of the college. Considering future growth prospects of the college. It is very important that the financial gains can be achieved by replacing all incandescent and CFL lamps with the LED bulbs. This will help in saving energy bill against around 75 kWh.

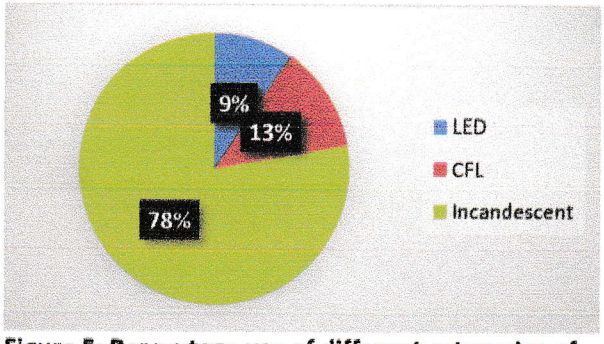

Figure 5: Percentage use of different categories of light bulbs

Efforts must be taken by the college authority for providing power efficient installations in the campus which shall include steps for changing over to LED lighting and harnessing solar energy.

Increase in green energy through solar installations will help the college in massive financial gains. Steps also must be taken for installation of sub-meters for different academics, administrative and residential blocks for monitoring and rationalization of power requirements.

Table 8: Different types of lighting arrangements in various establishments

Type of bulb/tube	No. of bulb/tube	% of Total
Incandescent (60 Watt)	59	78
LED (14 Watt)	31	9
CFL (20 Watt)	29	13
Total	119	100

The college must take necessary steps for rain water harvesting, replacement of all incandescent/ CFL bulbs with LED bulbs and installation of solar power plants for reducing energy demand. However, a detailed energy audit for individual administrative units, academic departments and hostels need to be carried out for better energy management.

11. BEST PRACTICES

The audit team has observed the following best practices of the college which contributes towards environmental sustainability:

i. Annual celebration of W.E.D by the college helps in generating awareness of environment among the students, college fraternity and the general public as well.
ii. The college has taken up a good imitative of setting up vermicomposting unit alongwith the installation of sanitary napkin disposal machines in the campus. These steps alongwith the other waste disposal management steps, will prove to be very effective for sustainable management of waste in the college.
iii. Another best practice of the college is the setting up of the 5KW Solar power plant. The college has also installed 18 Nos. of 15W LED street light with modules throughout the campus. This initiative can be considered to be a positive step towards energy conservation.
iv. Regular participation of student community in cleanliness drives like Swachhta Samaroh/Swachhta Pakhawada etc. and other similar other government initiatives goes on to deliver a strong message to the community on the necessity of cleanliness.

12. SUGGESTIVE MEASURES:

i. The college should maintain the existing green cover and increase if possible through creation of botanical garden and other such measures.
ii. The college should emphasize on regular monitoring of drinking water quality, air quality and ambient noise level within the campus.
iii. The noise levels were found to be exceeding the permissible levels and so the authority should take up adequate measures for providing the students a better classroom environment (acoustic modifications).
iv. The college authority should entrust the departments of Zoology and Botany for cataloging/ documentation and annual assessment of floral and faunal diversity of the campus. The college should also plant trees along the boundary of the campus which will help in mitigating air pollution as well as noise pollution.
v. The built-up environment of the college can be effectively utilized for rain water harvesting.
vi. Along with the existing 5KW solar power plant, the authority should try to establish more of such plants for tapping solar energy to compensate around 50% of the current energy requirement (i.e. approx. 40-50KW).
vii. All the science departments dealing with biological, chemical and other hazardous waste should be supplied with color coded bins as per SPCB rules and disposal of the same as per existing rules.
viii. Color coded bins for segregation of biodegradable and non-biodegradable waste should be installed in different zones within the campus.
ix. Signage depicting various environmental rules and prohibitory orders should be installed in different areas of the college to generate mass awareness.
x. The college should put in place a mechanism for collecting yearly data required for green audit process and store the same in a single database. Further, the college should prepare itself and carry out a comprehensive Green Audit during the next academic calendar.

Data Sources:

i. Land use data, flora-fauna assemblage data, student enrollment, staff data, water usage, electricity data – collected from Pragjyotish College authority.
ii. Air quality data- Pollution Control Board of Assam, Assam
iii. Water quality, Noise Data – Department of Environmental Science, Gauhati University

Acknowledgement:

The audit team members hereby acknowledge the Pragjyotish College for entrusting the Department of Environmental Science, Gauhati University with the task of carrying out Green Audit of the College.

We offer our special thanks to Dr. Manoj Kumar Mahanta, Principal of Pragjyotish College for his kind help and cooperation. We also sincerely thank all the teachers, non-teaching staff and students of the college who helped us in collecting the data.

GREEN AND ENVIRONMENT AUDIT REPORT

[2021 – 2022]

FOR

PRAGJYOTISH COLLEGE
SANTIPUR, GUWAHATI-781009, ASSAM, INDIA

Conducted By

PRINCIPAL
PRAGJYOTISH COLLEGE
BHARALUMUKH
GUWAHATI - 9

ENVIRO-TESTING-SERVICES
BIJAY NAGAR, NOONMATI, GUWAHATI-781020, ASSAM

MAY-2022

GREEN AND ENVIRONMENT AUDIT REPORT
[2021 – 2022]

FOR

PRAGJYOTISH COLLEGE
SANTIPUR, GUWAHATI-781009, ASSAM, INDIA

Conducted By

ENVIRO-TESTING-SERVICES

BIJAY NAGAR, NOONMATI, GUWAHATI-781020, ASSAM

May-2022

01	*18-05-2022*	Pragjyotish College Santipur, Guwahati-781009, Assam, India		
No.	Date	Description	Checked	Approved
ETS, ENVIRO-TESTING-SERVICES Guwahati	A Report on Green and Environment Audit (2021 – 2022)		*Job No. :ETS /KM /GEAR/ 01 dated 18/05/2022*	
			Doc: Final Report	

ETS-GUWAHATI
ENVIRO-TESTING-SERVICES
Accredited by SPCB Assam, ISO 9001, ISO 45001, MSME
Bijoy Nagar, House No – 35, Noonmati, Guwahati -781020, Assam
Telephone : 91(0) 3612551788, 919435492765, Email : envirotesting2011@gmail.com

Ref: ETS/PC/GEAR/01/2022 **Date: 18th May 2022**

COMPLETION CERTIFICATE

This is a Green and Environmental Audit report compiled on the basis of field survey and field investigation of various environmental components such as Land Use Land Cover, Micro meteorological Quality, Ambient Air Quality, Drinking Water Quality, Soil Quality, Noise Quality, Illumination Level, Carbon Footprint, Flora, Fauna along with environmental and Energy management practices.

The present work was carried out at the request of the Principal, Pragjyotish College, Santipur, Guwahati, Assam-781009 vide order number PC /Green & Env Audit/Invitation/2021-22 Dated 10.04.2021. The findings of the study carried out during the period of May 2021 to April 2022 are presented in this report. All the Analysis of Environmental Quality Parameters is done at the laboratories of Enviro Testing Services, Noonmati, Guwahati. The Laboratory is duly recognised by State Pollution Control Board, Assam, ISO 9001 :2015; ISO 45001:2018 and MSME.

For Enviro Testing Services

ENVIRO TESTING SERVICES GUWAHATI, ASSAM

(Dr. Hrishikesh Sarma)
Ex. Director, ETS, Guwahati

Date: 18.05.2022

ETS-GUWAHATI
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ACKNOWLEDGEMENT

Green and Environment Audit Assessment Team thanks Dr. Manoj Kumar Mahanta, Principal, Pragjyotish College for assigning this important work of Green and Environment Audit. We appreciate the cooperation to us for completion of the study.

We would like to convey our sincere thanks to all the Heads of the various Departments of Pragjyotish College for giving us necessary inputs to carry out this very vital exercise of Green Audit.

Our special thanks go to the faculty of Pragjyotish College:

Dr. Jyoti Prasad Das, Department of Geography

Mr. Amit Kumar Pradhan, Department of Botany

Mr. Bhrigu Kumar Nath, Department of Geography

Mr. Himadri Saikia, Department of Botany

We are also thankful to other staff members who were actively involved while collecting the data and conducting field survey

For Enviro Testing Services

(Dr. Hrishikesh Sarma)
Ex. Director, ETS, Guwahati

Date: 18.05.2022

Contents

1.0 Introduction of the Institute

1.1 Brief Introduction

Pragjyotish College, established on 1st September 1954, seven years after Independence, became a beacon of learning and a symbol of aspirations for the common people of Assam, raring to build a new nation. Pandit Tirthanath Sarma, eminent scholar and litterateur, responded to and actively participated in the nation building by taking charge as the founder Principal of Pragjyotish College. From its modest inception as an arts college, Pragjyotish College has now developed into one of the premier institutions of higher education in Guwahati. At present, it is a well-known full-fledged under-graduate college imparting higher education in multiple streams.

Situated on the western bank of the Bharalu, a rivulet, in the western part of Guwahati, Pragjyotish College is about 1 kilometre away from its confluence with the mighty Brahmaputra. It is about 4 kilometres from the Guwahati Railway Station and at a distance of about 20 kilometres from the Lokapriya Gopinath Bordoloi International Airport. At the backdrop of the college is a beautiful panoramic view of Nilachal Hills, the famous abode of Mother Goddess Kamakhya.

In the emblem of the college, is ingrained the motto "तेजस्विनावधीतमस्तु" (May our study make us illumined) and a conch shell at the centre on an eight-petalled full-blown beautiful-lotus, which symbolizes pure knowledge and the relationship between the teacher and the learner, praying to the Almighty for energy, protection, maintenance that ultimately leads to peace and bliss.

Motto of the College

Tejasvinavadhitamastu (May our study make us illumined)

Vision

To fulfill the visionary aspirations of the regional youth segment through a process of vibrant and continuous innovations and initiatives in multiple spheres of academic as well as professional development, leading to the fullest realisation of the potential of the students.

Mission

- To make teachers and the taught partners in the learning process.
- To promote a student friendly atmosphere for encouraging them to be self-reliant and self-employable.
- To promote extra-curricular activities simultaneously with curricular activities.
- To mould the students into socially conscious human beings.
- To encourage students to think globally and act locally as productive citizens, through the promotion of scientific temper and action.
- To foster and inculcate moral and spiritual accomplishments amongst the students.
- To develop a transparent and responsive administration.
- To undergo self-analysis and self-discovery leading to elimination of bottlenecks in the context of a holistic framework

In its glorious existence of six decades, Pragjyotish College, as alma mater, has produced a galaxy of eminent personalities in all walks of life. The college celebrated its Diamond Jubilee Year during 2013–14.

1.2 Location of the College Campus

Location	:	Urban
Campus Area	:	7.35 Acres
Built Up Area	:	1.95 Acres

1.3 Physical Structure of the College Campus

Total No of Departments	:31
Auditorium	:01
Hostel	:01
Cafeteria	:01
Health Centre	:00
Heritage Corner	:01
Stationery Corner	:00
Gymnasium	:01
Teachers Common Room	:01
Libraries	:01

1.4 Student, Teacher & Employees Strength

Total Number of Students	: 4027
Total Number of Teachers	: 83
Total Number. of Employees	: 20 (non-teaching)

2.0 Brief Outlines of Green Audit

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of organization. It aims to analyse environmental practices within and outside of the concerned place, which will have an impact on the eco-friendly atmosphere. Green audit is a valuable means for a college to determine how and where they are using the most energy or water or other resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus. If self-enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental

sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more predominant. The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institutes which will lead for sustainable development and at the same time reduce a sizable amount of atmospheric CO_2 from the environment.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Green Audit is assigned to the Criteria 7 of NAAC, which is a self-governing organization of India that accredits the institution according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through carbon footprint reduction measures.

3.0 Objective of Green Audit

(i) Landuse & Built-up Environment

(ii) Geographical Location with Campus Map

(iii) Present status of Micro meteorology, Ambient air, Noise, Soil quality and Water quality

(iv) Floral and Faunal diversity

(v) Management Practices with respect to Water, Waste and Energy

(vi) Carbon footprint

(vii) Organizational Level Efforts

4.0 Methodology

Methodology includes

(i) Physical inspection of the campus

(ii) Collection of Primary & Secondary Data

(iii) Observation and review of the documentation

(iv) Data analysis

5.0 Objective wise Analysis

5.1 Landuse & Built-up Environment

It encompasses area about 30351.42 sq. mts. Total built-up area is 17199.14 sq.mts. out of the total 30351.42 sq. mts of the campus. Both Assam type and multi-storied RRC construction are found within the campus. The play ground inside the college campus covering an area of about 5058.57 sq mts. The presence of garden inside the campus augments the aesthetic value of the college.

The area coverage of different land use classes

Features	**Area (**Acres**)**
Building	1.96
Statue	0.02
Playground	0.21
Roads (inside campus)	0.84
Trees	1.34
Parking Area	0.22
Garden	1.46
Open space	1.30
Total Area	**7.35**

5.2 Geographical Location with Campus Map

Pragjyotish College is situated at Shantipur, Guwahati, Kamrup(M) district of Assam, within the geo-position

Latitude N 26.253836^0

Longitude E 92.357961^0

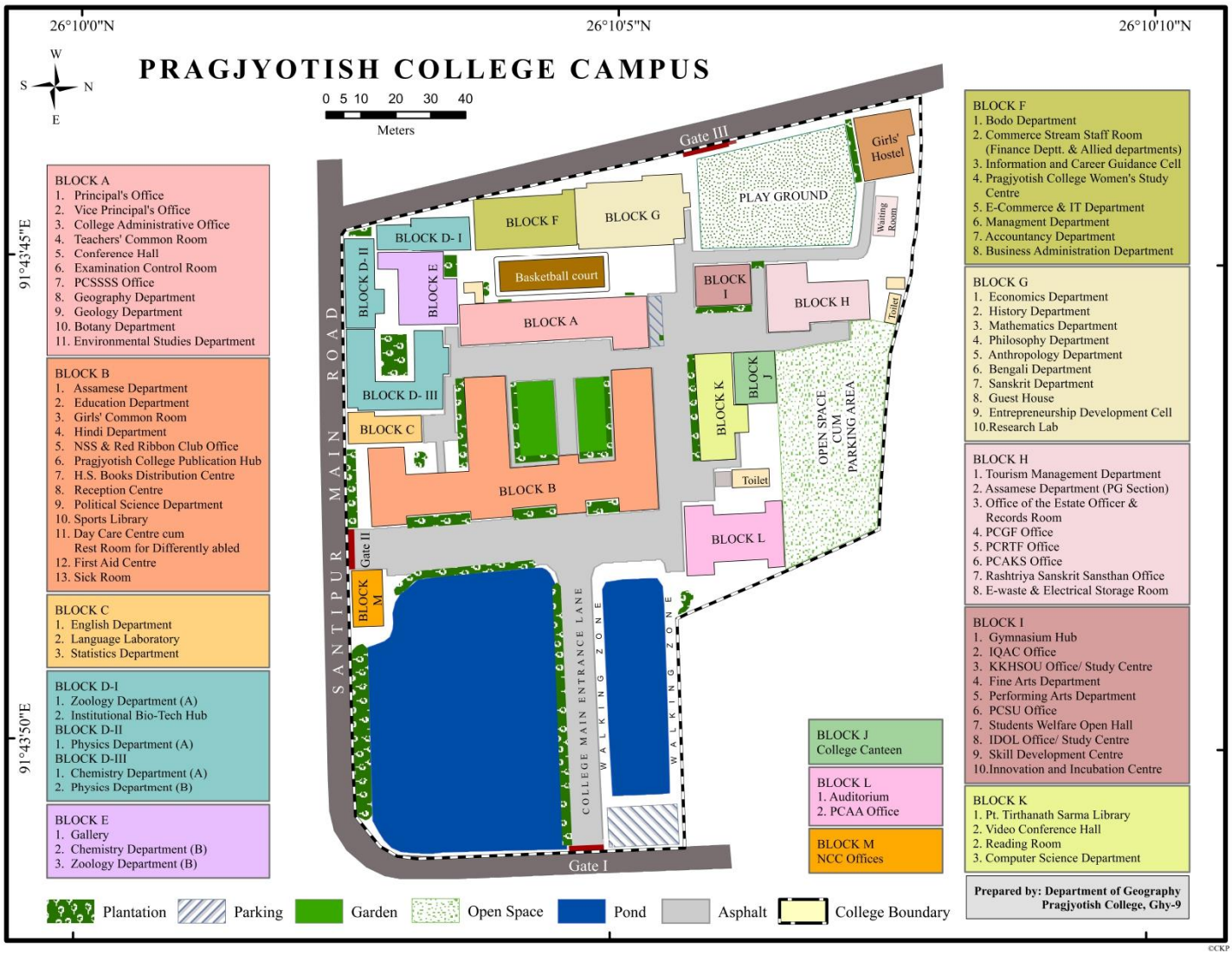


Fig 1: Map of the Pragjyotish College

Glimpses of Pragjyotish College

5.3 Present status of Micrometeorology, Ambient air, Water quality and Soil Quality

5.3.1 Micrometeorology Status

Monitoring Station	**Date**	**GPS Coordinate**
Micrometeorology	11.03.2022	N $26^0 10' 6.88''$ E $91^0 43' 47.91''$

Table 1 : **Micrometeorological Study at Pragjyotish College**

S/N	Parameters	Unit	Metrological Data at Pragjyotish College Date: 11.03.2022	
1	Temperature	^{0}C	Min	16
			Max	24
2	Relative Humidity	%	10.30am	68
			16.30pm	75
3	Wind Speed	Km/hr	10.30am	3.6
			16.30pm	4.8
4	Wind Direction	-	10.30am	SE
			16.30pm	SW

5.3.2 Ambient Air Quality

The average results obtained in the month of March 2022 at Pragjyotish College are presented in Tables 2. All the results meet the National Ambient Air Quality (NAAC) standards.

Monitoring Station	**Date**	**GPS Coordinate**
Ambient Air Quality	11.03.2022	N $26^0 10' 6.88''$ E $91^0 43' 47.91''$

Table 2: Ambient Air Quality at Pragjyotish College

AMBIENT AIR QUALITY						
Duration (24 Hour)			Average			
S/N	Parameters	Unit	Concentration	Limit	Weather Condition*	Test Method
1	Particulate Matter (PM10)	µg/m^3	94.6	100	Clear	IS5182(23)
2	Particulate Matter (PM2.5)	µg/m^3	56.2	60		CPCB Guideline
3	Sulphur Dioxide (SO_2)	µg/m^3	8.2	80		IS5182(2)
4	Nitrogen Dioxide(NO_2)	µg/m^3	9.8	80		IS5182(vi)
5	Pb in PM 10	µg/m^3	<0.2	1.0		IS5182(vi)
6	Pb in PM2.5	µg/m^3	<0.2	1.0		IS5182(vi)
7	Ni in PM10	ng/m^3	<0.2	20		IS5182(vi)
8	Ni in PM2.5	ng/m^3	<2.0	20		IS5182(vi)
9	As in PM10	ng/m^3	BDL	06		IS5182(vi)
10	As in PM2.5	ng/m^3	BDL	06		IS5182(vi)

5.3.3 Noise Quality study

In the present study, the noise level measurements were recorded using a precision sound level meter (Envirotech SLM100) with a measuring range between 0-150 dB. The instrument is calibrated before the measurements are recorded. The microphone was placed at 1.0 m from the facades of house, away from any reflecting surface and 1.2 m above the ground. In each location, adequate number of samples was taken at 10-minute intervals. The noise levels were recorded during day time and meteorological conditions: no wind no rain. The Noise Level Monitored (Table 3) and analyzed is found to be within the CPCB Prescribed Limit

Table 3: Noise Quality at Pragjyotish College

S/N	Locations	**GPS Co-ordinate**		Daytime SPL(dB) [6 am to 10 pm]		CPCB Limit SPL(dB)
				Leq	Range	
1	College Main Gate	N $26^0 10' 3.59''$	E $91^0 43' 50.96''$	75.5	61 – 72	75
2	Near Principal Office	N$26^0 10' 5.718''$	E $91^0 43' 49.037''$	62.2	52 – 67	
3	Near Library	N$26^0 10' 5.968''$	E$91^0 43' 46.8282''$	63.1	45 – 62	
4	Near Conference Hall	N$26^0 10' 4.73''$	E$91^0 43' 45.47''$	60.8	55 – 64	
5	Room no C001	N$26^0 10' 3.28''$	E$91^0 43' 47.002''$	60.1	56 - 63	
6	Room no E001	N$26^0 10' 3.53''$	E$91^0 43' 45.390''$	60.1	58 - 68	
7	Room no B3	N$26^0 10' 5.79''$	E$91^0 43' 46.128''$	59.8	54 - 67	
8	Near Canteen	N$26^0 10' 6.43''$	E$91^0 43' 46.64''$	60.8	59 – 69	

5.3.4 Drinking Water Quality

Drinking Water and Pond Water samples were collected from various locations of Pragjyotish College and the sampling locations are as follows

Sr.No.	Sampling Locations	GPS Co-ordinate	
1	Pond Water Near College Gate (PW)	N26^{0}10$'$4.51$''$	E91^{0}43$'$50.04$''$
3	Inside college drinking water facility (DW)	N26^{0}10$'$4.54$''$	E 91^{0}43$'$46.38$''$

Results of analysis of the most relevant water quality parameters are given in Tables 4. The test method for all the parameters along with tolerance limit as suggested by IS-10500 is presented in Table 3. All the parameters with respect to drinking water quality are found to be within the tolerance limit as suggested by IS: 10500.

Table 4: Various Test Methods of Water Quality Monitoring at Pragjyotish College

S/N	Parameters	Test Methods	IS-10500
1	Odour	APHA 20th Edition, 2150 B	Unobjectionable
2	Temperature (^{0}C)	Thermometry Method	50
3	Turbidity (NTU)	APHA 20th Edition, 2130B	5
4	pH	APHA 20th Edition, 4500-H+B	6.5 – 8.5
5	Conductance (mS/cm)	APHA 20th Edition, 2510B	-
6	Total Dissolved Solid (mg/L)	APHA 20th Edition, 2540 B	500
7	Total Suspended Solid (mg/L)	APHA 20th Edition, 2540 B	-
8	Chloride (mg/L)	APHA 20th Edition, 4500-Cl-B/D	250
9	Residual Chlorine (mg/L)	APHA 20th Edition, 4500-Cl-B	0.2
10	Sulphates as SO_4 (mg/L))	APHA 20th Edition, 4500-SO_4^{2-}E	250
11	Nitrate (mg/L)	APHA 20th Edition, 4500-NO_3-B	45
12	Fluoride (mg/L)	APHA 20th Edition, 4500-F^- D	1
13	Calcium (mg/L)	APHA 20th Edition, 3500 B	75
14	Magnesium (mg/L)	APHA 20th Edition, 3500 B	-
15	Iron (mg/L)	APHA 20th Edition, 3111 B	0.3
16	Manganese	APHA 20th Edition, 3111 B	0.1
17	Zinc	APHA 20th Edition, 3111 B	5
18	Arsenic	APHA 20th Edition, 3112 B	0.01
19	Total Coliform (MPN/100 mL)	APHA 20th Edition, 3111 B	0
20	Faecal Coliform (MPN/100 mL)	APHA 20th Edition, 9221 E	0

Table 5 : Results of Water Quality Monitoring at Pragjyotish College

S/N	Parameters	Unit	DW	PW
1	Odour	--	NS	NS
2	Temperature (^{0}C)	^{0}C	27	27
3	Turbidity (NTU)	NTU	0.4	3.6
4	pH	-	7.2	7.8
5	Conductance (mS/cm)	mS/cm	0.48	0.62
6	Total Dissolved Solid (mg/L)	mg/L	68.0	138.0
7	Total Suspended Solid (mg/L)	mg/L	28.0	64.0
8	Chloride (mg/L)	mg/L	22.1	28.2
9	Residual Chlorine (mg/L)	mg/L	<0.01	<0.01
10	Sulphates as SO_4 (mg/L))	mg/L	9.8	11.7
11	Nitrate (mg/L)	mg/L	7.8	8.4
12	Fluoride (mg/L)	mg/L	0.36	0.21
13	Calcium (mg/L)	mg/L	24.1	28.4
14	Magnesium (mg/L)	mg/L	26.1	29.3
15	Iron (mg/L)	mg/L	0.12	1.1
16	Manganese	mg/L	0.002	0.006
17	Zinc	mg/L	0.02	0.06
18	Arsenic	mg/L	<0.001	<0.001
19	Total Coliform (MPN/100 mL)	mg/L	03	10
20	Faecal Coliform (MPN/100 mL)	mg /L	NIL	5

5.3.5 Quality of Soil in the Study Area

Soil sample collected locations of the study area is as follows.

Sr.No.	Sampling Locations	GPS Co-ordinate	
1	Near Garden Area	$N26^{0}10^{/}4.51^{//}$	$E91^{0}43^{/}50.04^{//}$

It was analyzed for the most relevant physical and chemical parameters. It may be noted from the results of analysis that many of the soil samples have acidic pH . The presence of N, P, K and organic matter content is considerable for all the locations.

Table 6: Results of Soil Quality Monitoring at Pragjyotish College

S/N	Parameters	[S1]
1	PH (1: 2)	6.8
2	Conductance (ms)	0.38
3	Sand (%)	87.0
	Silt (%)	1.04
	Clay (%)	11.9
4	Water Holding Capacity (%)	48.3
5	Bulk Density (gcm^{-3})	1.2
6	Cation Exchange capacity (meq/kg)	0.31
7	Nitrogen (%)	0.07
8	Potassium (mg/kg)	18.2
9	Sodium (mg/kg)	23.1
10	Calcium (g/kg)	18.4
11	Magnesium (mg/kg)	36.2
12	Phosphorous (mg/kg)	12.2
13	Organic matter (%)	0.67
14	Sodium Absorption Ratio (SAR)	1.4
15	Zinc (mg/kg)	16.8
16	Copper (mg/kg)	6.4

5.3.6 Illumination Study

Adequate, well-balanced levels of illumination are essential in establishing safe and productive working conditions. Good lighting plays an important role in safeguarding health at work by enabling employees to perform their work comfortably and efficiently. Accordingly, there should be an appropriate level of the light falling on the surface on which workers are working. Excessive contrast, strong glare and light flickering in their fields of vision are also inappropriate.

To ensure good lighting the person responsible for a workplace should arrange for a suitable assessment on the lighting levels in the workplace. Good lighting can decrease errors by 30-60 % as well as decrease eye-strain and the headaches, nausea, and neck pain which often accompany eyestrain.

The Lux Levels were measured during day time in the college campus as well as in the office buildings. In this present study the Installed load Efficacy Ratio (IIER) are calculated as per BEE Lighting Code.

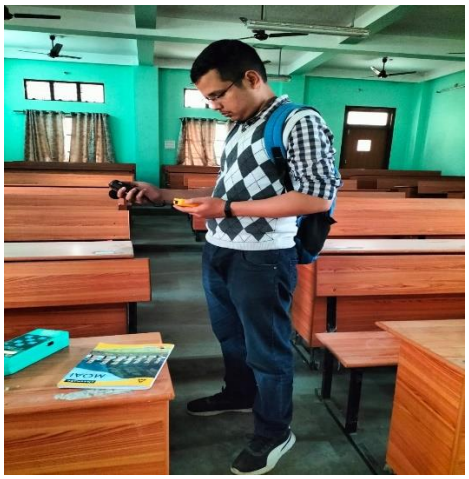
1	**A**	**B**	**C**	**D**
2		**Equation**	**Value**	**Unit**
3	Time of Measurement		Day time	
4	Room Identification			
5	Number Of lamps			
6	Length of the room			m
7	Width of the room			m
8	Floor Area	A=Length*Width		m^2
9	Height of the lamp from the Plane of measurement			m
10	Room index	(L*W)/Hm*(L+W)		
11	Average room illuminance	(Max+Min.lux)/2*Correction factor		lux
12	Measured/estimated circuit power			W
13	Installed lighting Efficacy	(Avg.illum*Floor area)/Circuit watts		lm/W
14	Target lighting efficacy			lm/W
15	Installed lighting Efficacy ratio (ILER)	Installed lighting efficacy/Target lighting efficacy		

Installed lighting Efficacy ratio (ILER)	**Assessment**
0.75 or above	Satisfactory to good
0.51 to 0.74	Review suggested
0.5 or less	Urgent action required

Table 7: Results of Installed lighting Efficacy ratio (ILER) at Pragjyotish College

S/N	Location	ILER	Assessment
1	Room No. B1	2.76	Satisfactory
2	Room No. B3	1.58	Satisfactory
3	Room No B14	2.25	Satisfactory
4	Room No C001	2.56	Satisfactory
5	Room No E001	2.75	Satisfactory
6	Office of the Principal	2.14	Satisfactory
7	Library	1.87	Satisfactory
8	Conference Hall	2.64	Satisfactory


Ambient Air and Noise Monitoring at Pragjyotish College



Illumination Study at College Premises


Soil and water Sampling at different locations of Pragjyotish College

Photographic view of Environmental Monitoring at Pragjyotish College

5.4 Floral and Faunal diversity

5.4.1 Floral Biodiversity

The survey was conducted in the month of February and March 2021 following the Quadrat sampling procedure. In the study area the vegetation is a complex of plant communities with considerable diversities. Since the plants showed normal and very good growth, there appears to be no adverse environmental factors prevailing in the area.

Plants of all types, in general, showed healthy and luxuriant growth in terrestrial, aquatic and aerial habitats in the study areas. Leaf diseases (leaf spot and shot-holes) on the aerial parts of the plants were very infrequently observed and did not show any adverse effect on the growth of the plants.

In this present study, different types of flora along with the total of species of the respective flora identified in the college campus are as follows.

Different types of flora		**Total number of species**
Tree	:	145
Shrubs	:	72

List of trees are presented in Table- 7 - 8

Table 7 : List of Trees recorded at Pragjyotish College

S/N	Family	Scientific name	Vernacular name	English Name	Uses	No.
1	Myrtaceae	*Psidium guajava L.*	Modhuriaam	Guava	Fruitis edible, young leaves are edible	**10**
2	Rhamnaceae	*Ziziphus jujube Mill.*	Bogori	Jujube	Fruitsedible	**3**
3	Meliaceae	*Azadiracta indica Nees.*	Neem	Indianlilac	Seed oil is used as pesticides and Insecticides	**10**
4	Combretaceae	*Terminalia bellirica Roxb.*	Bhomora	Beleric myrobalan	Dried fruits are used as medicine	**1**
5	Rubiaceae	*Neolamarckia cadamba*	Kadam	Burflower tree	Shade tree	**6**
6	Fabaceae	*Cassia fistula*	Sonaru	Goldens hower	Avenue tree	**2**
7	Moraceae	*Ficus religiosa*	Aahot	Peepal	Bark and ripe fruits are used in treatment of asthma	**1**
8	Myrtaceae	*Syzygium cumini*	Kolajamu	Javaplum	Fruitis edible	**3**
9	Arecaceae	*Areca catechu L.*	Tamul	Betelnut	Nut is chewed with betel leaf and works as digestive.	**2**
10	Annonaceae	*Monoon longifolium*	Debadaru	Masttree	Ornamental	**12**
11	Arecaceae	*Cocos nucifera*	Narikol	Coconut	Fruitis edible	**2**
12	Sapotaceae	*Mimusops elengi L.*	Bokul	Spanish cherry	Ornamental	**13**
13	Caesalpinaceae	*Delonix regia*	Krishnasura	Flame tree	Ornamental	**3**
14	Fabaceae	*Dalbergia sissoo*	Sisoo	Indian Rosewood	Avenue tree, Timber is used for making Furnitures	**10**
15	Anacardiaceae	*Mangifera indica L.*	Aam	Mango	Fruits Edible	**5**
16	Myrtaceae	*Syzygium jambos*	Bogijamu	Roseapple	Fruits edible	**1**
17	Putranjiviaceae	*Putranjiva rouxburghii Wall.*	Putranjivi	Child life tree	Leaves are used to treat skin disorders, seed oil is used in siddha and unani practices.	**3**
18	Santalaceae	*Santalum album L.*	Chandan	Sandal wood	Used for skin care and beauty purpose	**2**

19	Fabaceae	*Pterocarpus santalinus*	Rokto chandan	Red sandal wood	Used for skin care and beauty purpose	**3**
20	Lamiaceae	*Tectona grandis*	Segun	Teak	Wood is used in many Purpose	**1**
21	Araucariaceae	*Araucaria columnaris*		Christmas pine	Ornamental	**6**
22	Lythraceae	*Lagerstroemia speciosa*	Ajar	Queen flower	Ornamental	**5**
23	Comretaceae	*Terminalia chebula*	Hilikha	Chebulic myroabalan	Fruit is edible	**8**
24	Fabaceae	*Peltophorum pterocarpum*	Radhachura	Copperpod	Ornamental	**1**
25	Dilleniaceae	*Dillenia indica*	Ou tenga	Elephant apple	Fruits are edible	**1**
26	Musaceae	*Musa paradisica L.*	Kolgos	Banana	Whole plant along with fruits are edible	**10**
27	Myrtaceae	*Eucalyptus maculata Hook.*		Spotted Gum	Provide wood , gum and oil is used as medicine	**7**
28	Phyllanthaceae	*Phyllanthus emblica*	Aamlakhi	Gooseberry	Fruitis edible	**2**
29	Rubiaceae	*Gardenia angusta L.*	Togor	Cape jasmine	Ornamental	**1**
30	Moraceae	*Ficus racemosa*	Dimoru	Cluster fig	Ornamental	**1**
31	Arecaceae	*Dypsis lutescens*	Momai tamul	Golden canepalm	Fruitsareedible	**5**
32	Myrtaceae	*Melaleuca viminalis*		Weeping bottle brush	Ornamental	**1**
33	Combretaceae	*Termanalia arjuna*	Arjun	Arjun tree	Bark has medicinal properties,usedto treat many diseases	**3**
34	Moraceae	*Ficus rumphii*	Pakari bor	Mock Bodh tree	Shade tree	**1**
35	Fabaceae	*Acacia auriculformis*	Akashmoni	Earleaf acacia	Ornamental plant	**1**
35	Rutaceae	*Aegel marmelos*	Bael	Golden apple	Fruits are edible	**1**
36	Moraceae	*Artocarpus heterophyllus*	Kothal	Jackfruit	Fruit is edible	**2**
37	Fabaceae	*Leucaena leucochephala*	Subabul	River tamarind	Shade tree	**1**
38	Arecaceae	*Phoenix dactylifera*	Khejoor	Date palm	Fruits are edible	**5**
39	**Fabaceae**	***Albiiz lucidior***	**Moj**	**Potka Siris**	**Shade tree**	**1**

Table 8 : List of Shrubs recorded at Pragjyotish College

SL no.	Family	Scientific name	Vernacular Name	English name	Uses	No.
1	Malvaceae	*Gossypium arboreum*	Kopah	Cotton	Seed hairs are used in textile industry.	**1**
2	Apocyanaceae	*Tabernaemontana divaricata*	Kathana	Jasmine	Ornamental	**3**
3	Apocyanaceae	*Cascabela thevetia*	Korobi	Yellow Oleander	Ornamental	**3**
4	Rosaceae	*Photinia sp.*	Lalbati	Christmas berry	Ornamental	**16**
5	Cycadaceae	*Cycas circinalis*	Cycas	Cycas	Ornamental	**3**
6	Cupressaceae	*Cryptomeria spp.*		Cryptomeria	Ornamental	**8**
7	Rutaceae	*Citrus limon*	Kajinemu	Lemon	Fruits edible	**5**
8	Apocyanaceae	*Calotropis gigantea*	Aakon	Milkweed	Gum is used to treat skin disease traditionally	**5+**
9	Fabaceae	*Bauhinia purpurea*	Kanchan	Camelfoot tree	Ornamental	**5**
10	Rubiaceae	*Mussaenda erythrophylla*	Mussanda	Mussanda	Ornamental	**2**
11	Rubiaceae	*Ixora coccinia L.*	Ashok	West Indian Jasmine	Ornamental	**7**
12	Euphorbiaceae	*Codiaeum variegatum*	Pataa bahar	Golden dust croton	Ornamental	**5**
13	Euphorbiaceae	*Riccinus communis*	Eragos	Castor	Castor oil obtained	**5+**
14	**Cupressaceae**	***Thuja ocidentalis***	**Mayurpakhi**	**Thuja**	**Ornamental**	**9**

Eucalyptus maculate Hook.

Ficus racemosa

Cycas circinalis

Phoenix dactylifera

Psidium guajava L.

Pterocarpus santalinus

Photographic View of the Floral Diversity at Pragjyotish College

5.4.2 Faunal Biodiversity

In view of the need to determine the faunal characteristics of the study areas within the constraints of time, a checklist survey method was followed. Checklist surveys are employed primarily to confirm the presence of species, and sometimes the number of individuals of species in a surveyed area.

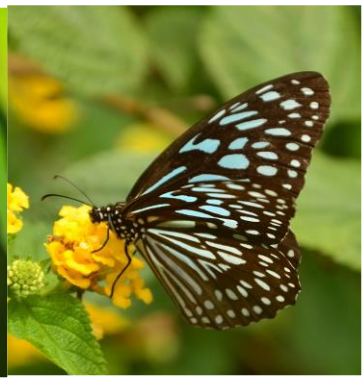
The survey was conducted during February – March 2022. The natural landscape of Pragjyotish college campus includes green vegetation covers, botanical Garden, open water bodies and marshy land which provides a unique environmental setting conducive for a wide range of floral and faunal diversity. The campus is rich in animals that includes different animal species belonging to the Phylum Arthropoda and Chordata.. Among Arthropods 18 species of butterfly and 4 species of Spiders were recorded. Among Chordates, 11fishes, 4 amphibians, 7 reptiles, 16 birds and 5 mammalian fauna were recorded in the college campus.

Table 9 : Different butterfly species recorded at Pragjyotish College Campus

Serial No.	Common Name	Scientific Name
1	Grey Pansy	*Junonia alites*
2	Common palmfly	*Elymnias hypermnestra*
3	Black veined Albatros	*Appias olferna*
4	Great eggfly	*Hypolimnas bolina*
5	Small branded swift	*Pelopidas mathias*
6	Himalayan Spangle	*Papilio protenor*
7	Common Mormon	*Papilio polytes*
8	Red Helen	*Papilio helenus*
9	Lime(Swallowtail)	*Papilio demoleus*
10	Black and white helen	*Papilio nephelus*
11	Common crow	*Eupolea core*
12	One Spot grass yellow	*Eurema andersonii*
13	Indian cabbage white	*Appiascanidia*
14	Lemon Pansy	*Junonia lemonias*
15	Common mime	*Papilio clytia*
16	Common banded demon	*Notocrypta paralysos*
17	Chocolate demon	*Ancistroides nigrita*
18	Tailed Joy	*Graphium agamemnon*
19	Bush hopper	*Ampittia dioscorides camerta*
20	Dark blue tiger	*Tirumala septentrionis*

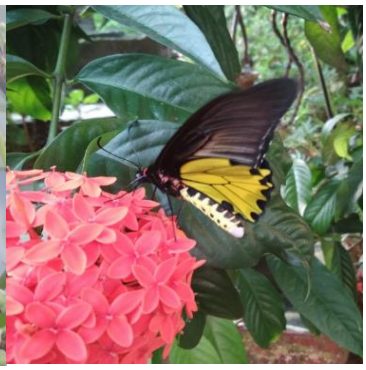

Bush hopper


Common palmfly


Dark blue tiger


Common crow


Grey Pansy


Birdwing

Photographic View of the Fnunal Diversity at Pragjyotish College

Table 10: Different species of spider recorded in the college campus

Serial No.	Scientific Name
1	*Argiope pulchella*
2	*Phintella vittata*
3	*Nephilia pilipes*
4	*Ampittia dioscorides camerta*

Table11: Different fishes recorded in two ponds of the college

S.NO	Scientific Name of Fish	Common Name
1	*Channa punctatus*	Goroi
2	*Channa striatus*	Shol
3	*Cyprinus carpio*	Common carp
4	*Amblypharyngodon mola*	Moa
5	*Catla catla*	Bhakua
6	*Cirrhinus mrigala*	Mirika
7	*Puntius sophore*	Senduri puthi
8	*Clarius batrachus*	Magur
9	*Heteropneustes fossilis*	Singi
10	*Monopterus cuchia*	Kuchia
11	Labeo rohita	Rohu
12	Anabus testudineus	Kawoi
13	*Mystus vittatus*	Tengra

Table12: Different species of amphibia found in the college campus

Serial No.	Name
1	*Bufo melanostictus*
2	*Rana tigerina*
3	*Euphlyctis cyanophlyctis_*
4	*Microhyla ornata*

Table13: Different species of reptiles found in the college campus

Serial No.	Name
1	*Bungarus fasciatuS*
2	*Enhydris enhydris*
3	*Ptyas mucosa*
4	*| Lycodon aulicus*
5	*Ahaetula nasutus*
6	*Sphenomorphus macculalus*
7	*Eutropis carinata*

Table14: Different species of birds found in the college campus

Sr. No.	Common Name	Scientific Name
1	Coppersmith Barbet	*Megalaima haemacephala*
2	Black Drongo	*Dicrurus macrocercus*
3	Indian Jungle Crow	*Corvus culminatus*
4	Common Myna	*Acridotheres tristis*
5	Spotted Dove	*Spilopelia chinensis*
6	Oriental Magpie Robin	*Copsychus saularis*
7	*White-breasted kingfisher*	*Halcyon smyrnensis*
8	House Sparrow	*Passer domesticus*
9	Red Vented Bulbul	*Pycnonotus cafer*
10	Purple Sunbird	*Cinnyris asiaticus*
11	Asian Pied Starling	*Gracupica contra*
12	Blue Throated Barbet	*Megalaima asiatica*
13	House crow	Corvus splendens
14	Jungle Myna	*Acridotheres fuscus*
15	Asian barred owlet	*Glaucidium cuculoides*
16	Asian Koel	*Eudynamys scolopaceus*

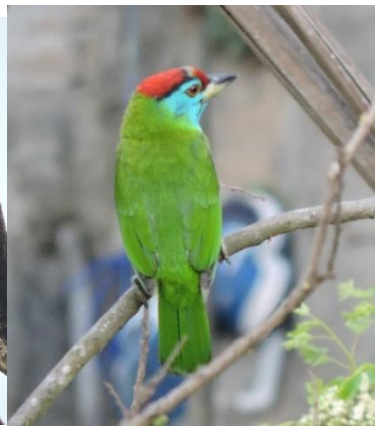
Channa punctatus

Catla catla

Labeo rohita

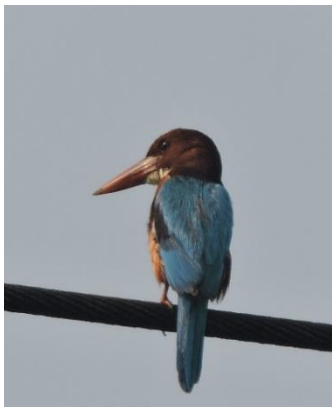
Anabus testudineus

House crow



Blue Throated Barbet

Asian Pied Starling



White-breasted kingfisher

Asian Pied Starling

Black Drongo

Photographic View of the Faunal Diversity at Pragjyotish College

5.5 Management Practices with respect to Water, Energy and Waste

5.5.1 Water Management Practices

- Water Storage per day= 13000. Lt
- Water Tank Cleaning=Twice per Annum
- Daily Consumption of water= 12,500 Lt

S/N	Location	Number of storage tank	Capacity
1	ADM Building	2	2000
2	RUSA Building	2	3000
3	Commerce Building	2	2000
4	Heritage Building	1	2000
5	Girls Common Room	1	1000
6	Girls'Hostel	3	3000

Observations

(i) No leaking taps, pipes, valves were identified in the college premise.

(ii) There are no any push button taps

(iii) The college has set-up the one rain water harvesting unit capacity 1000 L within the college campus. The stored water is mainly used in gardening and many other purposes. Apart from this one big pond is also in the campus.

(iv) The college has optimized its irrigation system at night or early morning hours to minimize evaporation for gardening.

(v) Water escaping from overflows either inside or outside building was not identified during onsite audit.

5.5.2 Energy Management Practices

- Electric Load = 80 KW
- Daily Consumption=unit 334 kwh
- Electric Bill paid for the period of 2021-22 =Rs. 6,75,676

Electrical Items in the college	No. of Tubes	No. of CFL Light	No. of LEDs	No. of Fens Celling+wall+exhust	No. of LCD projector	No. of Computers +Printers	No. of photocopier	Common /sophisticated analytical equipments	No. of Ac
Total Electrical components used in the college campus	848	110	349	758	30	30	05	-	42

Observations:

i) There is minimum or practically negligible use of lights during day time as the building structure has possibility of daylight usage

ii) The lighting arrangements are well balanced with arrangements to switch ON and OFF

iii) The policy of college is switch off the lights and other electrical equipment when they are not in use.

iv) Cleanliness is well maintained. In- house light fittings are cleaned time to time.

v) Lights are negligibly operated during day time. The lights are operated manually. There is no any sensor-based lighting system

vi) The college is utilising natural lighting as first preference

vii) Computers, printers, photocopiers and other equipment are switched off at the end of the day.

viii) The all the electrical equipment is well operated. The overall electrification system is regularly monitored by a duly qualified electrician.

ix) Regarding the use of renewable energy college has installed solar panels and Solar street light also

x) College Management is evaluating the feasibility of introduction of the solar PV generation.

5.5.3 Waste Management Practices

Waste can be solid as well as liquid. Solid waste can be further divided into

(i) Biodegradable- Like food waste, Garden waste, waste from toilets etc.

(ii) Non-biodegradable-Like Plastics, tins, glassware etc.

Along with these, there are some hazardous wastes generated from laboratories, and E-waste (Computers, electric and electronic parts). Besides this, liquid waste is also there. The institute has over 4000 stakeholders which includes students, teaching staff and non-teaching staffs, thus a huge amount of waste is generated on a daily basis.

Sl/No.	Source	Type of waste	Approximate amount of waste generated per day
1.	Classroom, staff room, Library	Paper, pen, wrappers, plastic bottles etc	Biodegradable waste = 8.5 kg Non-biodegradable waste = 2.5 kg. Liquid waste= 9.5 kL E waste per annum = 90 kg
2.	Laboratories	Chemicals, glassware, waste water and solvents	
3.	Toilets	Sanitary napkins, waste water etc.	
4.	Canteen	Disposable plates, leftover food and water, wrappers, plastic bottles etc.	
5.	Office and computer centre	Papers, wrappers, plastics, paper pins, E-waste etc.	

Waste management practices adopted by the College

1. Solid waste generated in the campus
    - dry and wet waste are collected in dustbins with two chambers which are placed in the library, teachers' common room, canteen, lecture hall, near classroom etc.
    - Segregation of solid waste into dry and wet waste in different bins.
    - Specific waste management plans are adopted to manage solid waste in the campus. College has tie-up with Guwahati Municipal Corporation (GMC) and the generated solid waste is managed with help of GMC.
    - E-waste includes malfunctioning computer monitors, printers, scanners, calculators, keyboards, mouse, cables, circuit boards, bulbs etc. generated from campus is subjected to handover E-waste authorised agency
2. Toilet waste
    - Soak pits are available in toilets
    - Toilet waste is connected to large tanks. These tanks are cleaned periodically.
3. Other waste
    - Sanitary napkins are subjected to burn in the incinerator.
    - Leaf litters and organic waste are used in the vermicomposting unit
    - Waste like broken bulbs, tubes etc. which cannot be repaired are dumped temporarily at the dumping bin and later on disposed of to the municipality collection van.

Vermicomposting unit at Prgjyotish College Campus

6.0 Carbon footprint due to Transport System

Emission of CO_2 through transport system – both public and private – is very high in India as India is credited with the third rank in carbon emission in this regard. It is estimated that in India, 9% of the total carbon is emitted by the transport system.

In Pragjyotish College during survey it was observed that on an average, there are 49 number of four wheelers are used by faculty while 150 number of two wheelers are used by students and staff. Further very few student uses bicycles. It is appropriate to calculate the petrol consumption separately for four wheelers and two wheelers.

The fuel consumption by vehicles is determined by the type of vehicle, year of manufacturing, maintenance status, traffic system of the particular area, etc. High-end and medium-range bikes consume different quantities of petrol.

Conversion table to calculate carbon emission by vehicles per litre is very complicated in view of the local variables to be taken for calculation. Instead, a simple but universally accepted calculation calendar for various types of fuels and their CO_2 conversion rate was adopted.

6.1 Emissions of CO_2 by transport system at Pragjyotish College

It is estimated that the average mileage covered by each vehicle is about	10 km.
The total mileage covered by the 150 number of two wheelers per year	(150 × 10 × 200) = 300000 km
The average mileage covered by four wheelers is also the same	8 km per day
The total mileage covered by 49 four wheelers per year	(49 ×8 × 200) = 78400 km
The total mileage covered by two and four wheelers per year	(300000+ 78400) = 378400km
The standard fuel consumption for two wheelers is taken	35 km / 1L of Fuel
The standard fuel consumption for Four wheelers is taken	15 km / 1L of Fuel
The total quantity of petrol consumed by 150 number Two Wheelers	(300000 /35) = 8571L
The total quantity of fuel consumed by 49 number four wheelers per year	(78400/15) = 5227 L
The total fuel consumption per year (Two+ Four) Wheelers	(8571 + 5227) = 13798 L
Combustion of 1 litre of diesel/petrol leads to the emission of CO_2	2.68 kg
The total quantity of CO_2 emitted by 13798 litres of fuel per year	(13798 × 2.68) = 36978 kg

6.2 Flora and Carbon Footprint Reduction

Carbon Absorption Capacity of Flora at Pragjyotish College

The carbon footprint calculation is based on the following standard accepted assumptions

- Carbon absorption capacity of one full grown tree = 6.8 kg CO_2
- Carbon absorption capacity of one semi grown tree = 3.4 kg CO_2
- Carbon absorption capacity of one Shrubby vegetation = 0.2 kg CO_2

Total CO_2 absorption Capacity of Flora

Type of Tree	Total No. of Tree	Amount of CO_2 absorption/ tree (kg)	Total CO_2 absorption (kg)
Full Grown	145	6.8	986
Semi Grown	72	3.4	245
		Total amount of carbon absorption by Flora	**1231**

6.3 Oxygen Emission Capacity of Flora at Pragjyotish College

The carbon footprint calculation is based on the following standard accepted assumptions

- Oxygen Emission capacity of one full grown tree = 117.6 kg O_2
- Oxygen Emission capacity of one semi grown tree = 58.8 kg O_2
- Oxygen Emission Capacity of 400 number of Shrubby vegetation = 550 kg O_2

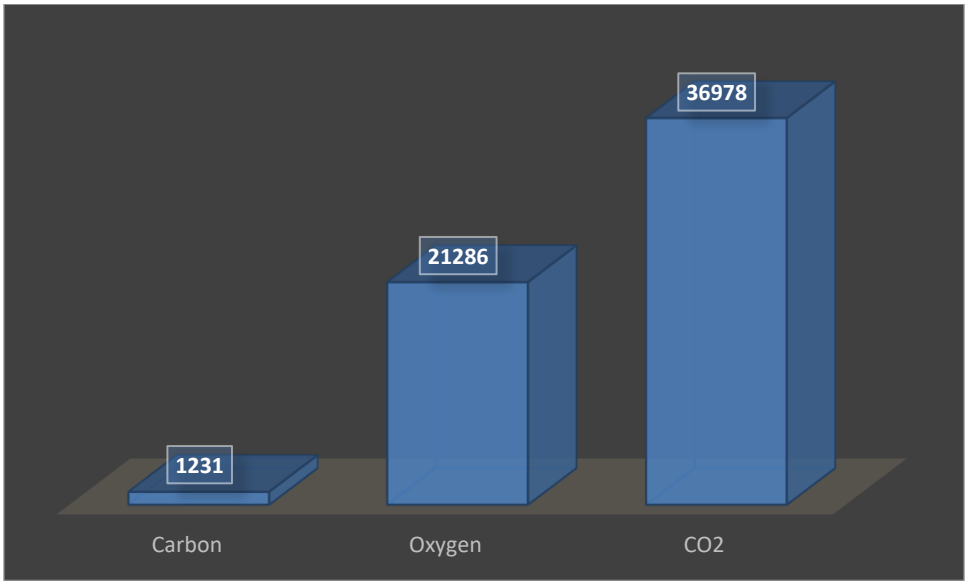
Type of Tree	Total No. of Tree	Amount of O_2 Emission / tree (kg)	Total O_2 Emission (kg)
Full Grown	145	117.6	17052
Semi Grown	72	58.8	4234
		Total amount of Oxygen Emission by Flora	21286

6.4 Summary of Carbon Footprint Reduction at Pragjyotish College

Carbon Absorption Capacity of Flora	1231 kg
Oxygen Emission Capacity of Flora	**21286** kg
The total quantity of CO_2 emitted by vehicles	36978 kg

6.5 Summary of Carbon Footprint per person at Pragjyotish College

Total Carbon Footprint in Tonnes	:	36.9
Total Carbon Footprint in kg	:	36978
Total Average number of persons in the College	:	3800
Carbon emission per person in kg	:	36978/3800 = 9.7
Carbon emission per person in kg	:	9.7 kg



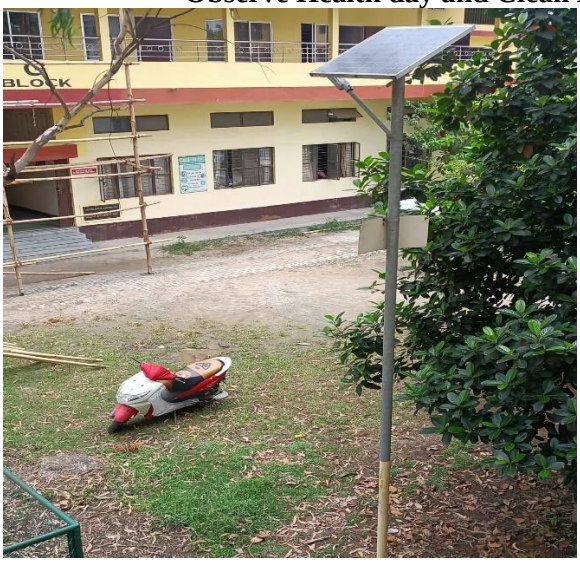
7.0. Organizational effort

S/N	Items	Responses
Organizational effort		
1	Is the college having campus green team?	Yes. Copy Attached
2	Have you established an environmental mission/vision for your campus	Yes. College has established Environment to make the students and teachers aware about the environmental issues and challenges. The college has organized several programmes addressing environmental awareness among students and community as well (e.g. World Wetland Day, 2nd February; World Environment Day, 5th June; World Wild-life Conservation Day, 4th December; World Soil Day 5th December).
3	College initiates any tree plantation programme	Yes. programme organized within and outside the college campus particularly on College Foundation Day and World Environment Day (5th June)
4	How may numbers of existing tree, shrubs and herbs species	Tree- 145, Shrubs- 72
5	How may numbers of existing full-grown tree, semi grown trees	Full Grown - 145 Semi Grown – 72
6	Is there any lawn in the college campus? If yes what is area	Yes

7	Is the college encouraging sustainable behaviour via: Education campaigns? Such as Posters, placards, Messages, incentives? Contests? awards?	Yes, College organized various programme encouraging sustainable behaviour such as World Environment day (5th June), World Wetlands day (2nd February), National Science day (28th February), International Yoga Day (21st June), World AIDS Day(1st December), No Tobacoo Day (31st May), Ekta Divas (31st October) ; Wildlife Conservation Day (4th December); World Soil Day (5th December) and many more.
8	Is the college staff modelling sustainable behaviour for students, peers, and community?	Yes. Various community development works in terms of education, health & hygiene, environmental education etc. has been initiated.
9	Is the college having solar, wind, or other forms of renewable energy?	Yes. Planning for solar PV generation
10	What are the good practices pertaining to Transport?	Encourage the use of public transport, Bicycle and Zero vehicle movement in the college campus atleast one day in a week.
11	What is the average number of vehicle movements in terms of two & Four wheelers	Two Wheelers: 140 - 150 Four Wheelers: 40 – 50
12	Has the college initiated to reduce its carbon footprint	Yes, College has taken several initiatives to reduce total carbon footprint amount within the college campus.
13	Has the college adopted any specific measures to reduce pollution	To motivate students, social service competitions are being held on special occasion such as college week, environment day, Science Day, Azadi ka Amrit Mahotsav etc., where they are awarded for their active participation.

Celebration of Independence Day in the College Campus

Observe Health day and Clean Drive by student of Pragjyotish College



Street Solar Light, Dust bin and Rain water harvesting Unit

8.0 Recommendations

Water Management

(i) The college Management needs to consider the low - flow faucets, as the replacement for the existing conventional taps.

(ii) The toilet and wash room should be equipped with push button

(iii) Sprinkler and drip irrigation should use for gardening

(iv) The college should install more rain water harvesting unit to cater the need of the college as well as to save ground water

(v) More advanced water purification treatment facilities may be installed within the campus in order to ensure safe drinking water.

Energy Management

- The public lights within the campus may be run with solar panels and the existing capacity of the solar panels should increase. Authority should take action to replace the existing lights with LED lamps.
- Energy auditing should be done with the help of Energy Management Centre (EMC)

Waste Management

- Specific waste management plans should be adopted to manage solid waste in the campus, use of plastic carry bags, plastic glass/ cups/plates and flex boards should be banned inside the College to create a plastic free zone.
- For managing organic wastes, the existing vermicompost plant may be improved in organised way
- There should be a proper system for the management of hazardous wastes.
- ETP and STP should install in the campus properly

Green Management

- Green habitat concept should be adopted for all the building construction activities of the college in future, which may help a long way in reducing energy usage, increasing aesthetic appeal of the buildings and class rooms, besides reducing carbon foot print.
- Further, more green spaces should be established all around the campus around larger trees and shades for the benefit of the students. All these aspects should monitor by Green Campus Committee.
- Air quality, drinking water quality should monitor annually.

****

Annexure 1 : Scanned copy of Green Campus Committee of Kanya Mahavidyalaya
Annexure 2 : Scanned copy of electric bill paid receipt
Annexure 3 : Scanned copy of ISO Certificate
Annexure 4 : Scanned copy of PCB Certificate
Annexure 5 : Scanned copy of MSME Certificate

OFFICE OF THE PRINCIPAL

PRAGJYOTISH COLLEGE

GUWAHATI – 781 009

Email: pragcollege@yahoo.co.in Website: www.pragjyotishcollege.org.in

Fax & Telephone: 0361-2544531

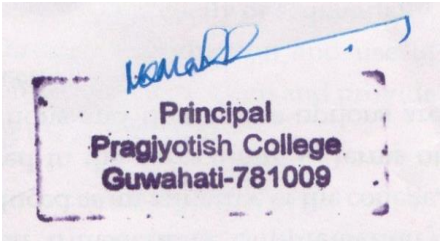
Dated: 28.02.2019

A Committee is constituted with the following faculty members to undertake a **Green Audit** for the college.

Members of the Green Audit Committee:

1. Dr. Manoj Kumar Mahanta, Principal , Chairperson
2. Dr. Jyoti Prasad Das, Convener (Department of Geography)
3. Amit Kumar Pradhan, Member (Department of Botany)
4. Bhrigu Kumar Nath (Department of Geography)
5. Himadri Saikia, Member (Department of Botany)

The Committee will continue until further orders from Authority.



Assam Power Distribution Company Limited

NAME OF ELECTRICAL SUB-DIVISION / IRCA : IRCA GEC-I
CIN: U40109AS2003SGC007242
GSTIN: 18AABCL1354J1ZJ
ELECTRICITY BILL

Website: www.apdcl.org

Centralized Customer Care Number: 1912

Consumer Name: THE PRINCIPAL, PRAGJYOTISH COLLEGE	**Consumer Number: 006000002737**	**Bill Amount: 83076.000**
Address: ,SANTIPUR GUWAHATI 9,GUWAHATI	Old Consumer Number: 63000001300	**Due Date: 26-Apr-2022**
	DTR Number: 2171	Bill Number:900057360
	Pole Number :000	Bill Period: 01-Mar-2022 To 31-Mar-2022
	Connected Load in KW: 80.0	Bill Date : 11-Apr-2022
Contact Number : 9864049782	Contracted Demand in KVA: 94.11	Number of Days: 31
Email : Pragcollege@yahoo.co.in	Load Security:175480.000	Meter Status: DEFECTIVE
Tariff Category: HT IV BULK SUPPLY (GOVERNMENT EDUCATION)	Meter Number: APD19648	Billing Status: ESTIMATED
Supply Voltage Level: HT		006000002737

Meter Reading Details

Reading Type	Meter Number	MF	Previous Reading in KWh	Previous Export in KWh	Current Reading in KWh	Current Export in KWh	Difference Reading in KWh	Difference Export in KWh
KWH(Normal)	APD19648	30.0	20897.600	0.000	20897.600	0.000	0.000	0.000

Units Consumed	PF Penalty/Rebate	LT Metering Penalty	DTR Penalty	HT Rebate	Voltage Rebate	Voltage Penalty	Billable Units in KWh
Normal | 10034.700	0.000	301.040	0.000	0.000	0.000	0.000	10335.740

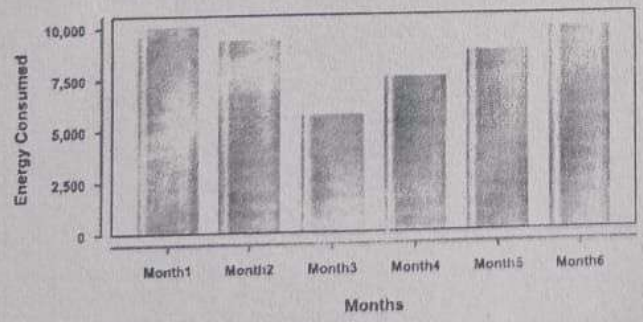
Recorded Demand (In KVA)	0.66	Maximum Demand (in KVA)	19.8	Billing Demand (in KVA)	94.11	Average Power Factor	99.4
Power on Hours	744.0			Availability Percentage			

Billing Details

Current Demand	Outstanding Amount	Adjustment Amount	Solar Rebate	Net Bill Amount
Rs. 83075.870	Rs. 0.000	Rs. 0.000	0.00	**Rs. 83076.000**
				In Words: Rupees Eighty Three Thousands Seventy Six Only

PLEASE PAY YOUR BILL ON TIME AND HELP US TO SERVE YOU BETTER

Energy Consumption (Last Month's Bill)



Charges Breakup

Details	Units	Rate	Amount
Energy Charge(Normal)	10335.740	6.450	66665.520
Total Energy Charge			66665.52
Energy Charge Re-Estimated			0.000
Rooftop Solar Adjustment			0.00
Demand/Fixed Charge (KVA)	94.11	130.0	12454.36
Electricity Duty			3955.99
Govt. Subsidy		0.0	0.0
Overdrawal Penalty			0.0
Meter Rent		0.0	0.0
Charges for dishonoured cheque			0.0
Arrear Principal			0.000
Arrear Surcharge			0.000
Current Surcharge			0.000
Adjustment Amount			0.000
Rebate if paid before due date			**0.00**
Payable amount before due date			**83076.00**
Payable amount after due date			**83076.00**

Checked by E&OE:

Prepared by: 40000541

Signature with seal

Certificate

This is to Certify that

ENVIRO TESTING SERVICES

Bijay Nagar, Noonmati, Guwahati - 781020,
Assam, India

has been found in Compliance with requirements of

Quality Management System

ISO 9001:2015

for the following scope:

Environment Work Deals With Testing of Soil, Water and Air.

Certificate No.	:	QMS/025224/1221
Original Certificate Date	:	08-December-2021
Issue Date	:	08-December-2021
Expiry Date	:	07-December-2024

To check this certificate status visit:
"http://uasl.uk.com/certifiedorganization.html"

Authorised Signature

Quality Control Certification

UK Office: 1929, Chynoweth House,
Trevissome Park, Truro-TR48UN, Cornwall, UK

India Office: 2nd Floor, Aman Market,
Narela Mandi, Delhi - 110 040, India

Certificate

This is to Certify that

ENVIRO TESTING SERVICES

Bijay Nagar, Noonmati, Guwahati - 781020,
Assam, India

has been found in Compliance with requirements of
Occupational Health and Safety Management Systems

ISO 45001:2018

for the following scope:

Environment Work Deals With Testing of Soil,
Water and Air.

Certificate No.	:	OHSMS/025225/1221
Original Certificate Date	:	08-December-2021
Issue Date	:	08-December-2021
Expiry Date	:	07-December-2024

To check this certificate status visit:
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Quality Control Certification

UK Office: 1929, Chynoweth House,
Trevissome Park, Truro-TR48UN, Cornwall, UK

India Office: 2nd Floor, Aman Market,
Narela Mandi, Delhi - 110 040, India

Pollution Control Board, Assam

(Department of Environment & Forests : : Government of Assam)

অসম প্রদূষণ নিয়ন্ত্রণ পৰিষদ

(অসম চৰকাৰৰ বন আৰু পৰিৱেশ বিভাগ)

No.WB/GUW/T-2445/13-14/198 1949

Dated Guwahati the 19th Feb 2022

OFFICE ORDER

In exercise of the powers conferred under section 17(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 17(2) of the Air (Prevention & Control of Pollution) Act, 1981, the Pollution Control Board, Assam is pleased to renew the recognition of the Laboratory for One (1) year subject to the outcome of Hon'ble Guwahati High Court Order WP(C)/8468/2018 to **M/s. Enviro Testing Services, Bijoy Nagar ,House No.35. Noonmati, Guwahati-22, Kamrup (M),Assam** awarded vide Pollution Control Board, Assam order No. WB/GUW/T-2445/13-14/197 dtd.19.02.2022. This Renewal of recognition is awarded subject to the following terms & conditions for the purpose of analyzing certain parameters discharged from the industries or any other institutions.

Terms & Conditions:

1. The recognition may be revoked or withdrawn subject to the violation of the following conditions :-
   i. The laboratory shall carry out analysis only for the parameters authorized by the Board as mentioned in the certificate of approval.
   ii. The laboratory shall carry out analysis of samples as per IS, APHA code of Federal Regulation and should specify the method in the analysis report.
   iii. The laboratory will keep a proper record of receipt of samples, the reading of each and every parameter analyzed and calculation of results of all parameters on permanent register and will subject to inspect by the Board.
   iv. The samples collected should be analyzed within seven (7) days from the date of collection and copy of the same along with the brief inspection report to be sent to Pollution Control Board, Assam.
   v. The accredited laboratory will collect samples as required by the process, which will be divided in two parts. One part will be analyzed, while the other part will be preserved for thirty days. For air samples, the used thimbles and filter papers will be preserved for six(6) months so that the Board can check randomly and verify the credibility.
   vi. The Board officials may visit laboratory for checking preserved samples at random.
   vii. The Laboratory must submit information on whether ETPs/APCDs installed by the respective unit was running or not along with test report. At the time of collection samples by the Laboratory, all the processes of the unit should invariably be running. The analysis report should generally reflect site conditions and capacity at which the industry was running at the time of sampling.
   viii. Records pertaining to inventory of the chemicals/ reagents shall be kept properly on a permanent register and will be subject to inspection by the Board.
   ix. Laboratory will submit details of staff involved in sampling and testing and the person coming for collection of sample should have authority letter of Laboratory.
   x. Any change in address, staff or other additions/ alterations in the facilities of the laboratory should immediately be reported to this office within fifteen (15) days.

Contd....p/2

xi. *Prior information is to be given* to the concerned Regional Officers and Head Office for collection of sample and Regional Officers/Field Officer will associate during the sampling.

xii. The approval shall be suspended or cancelled if the Board has reason to believe that the data reported by the Laboratory is repeatedly erroneous. Further the Laboratory and its key personnel shall be liable to be proceeded against for imposition of penalty in case the Board has reason to believe that the data reported by the Laboratory is intentionally manipulated.

xiii. If it is found that the aforementioned Laboratory has any involvement with any of the industry against whom allegations have been made forging of Board's Authority, will result in withdrawal of recognition apart from other legal proceeding as provided under existing laws.

xiv. If the laboratory failed to achieve the satisfactory performance regarding testing of the coded samples supplied by the Pollution Control Board, Assam will result in withdrawal of recognition.

xv. The instruments/equipment should be always kept in working and perfectly calibrated condition.

xvi. The Laboratory has to submit a brief plan on safety measures undertaken for risk management pertaining to the work environment.

xvii. In legal matters, the analytical reports of the above laboratories will not be binding to the Board and such reports generated by the State Board will always prevail over.

xviii. Regarding compliance of occupiers, Boards analytical report and opinion will stand final over the reports and opinion of the aforesaid laboratory.

xix. Board will have every right to accept or reject the analytical and other reports submitted by the aforesaid laboratory without assigning any reason thereof.

xx. National Accreditation Board for Testing and Calibration Laboratories (NABL) is mandatory at the time of Next renewal of recognition i.e from the year 2023 onward.

2. This order will remain valid for **one (1) year with effect from 20 Feb, 2022** subject to the outcome of Hon'ble Gauhati High Court Order in WP(C)/8468/2018. But the said recognition may also be withdrawn at any time in case of violation of any of the aforementioned conditions or any of the conditions mentioned in **Annexure-A(i) & (ii)** or for any other unlawful activities, which are not proper under the law of the land.
3. This order has been passed as per the approval of the Competent Authority.

Member Secretary

Memo No.WB/GUW/T-2445/13-14/198-A 1949 Dated Guwahati the19th Feb 2022

Copy to:

1. The Chairman, Pollution Control Board, Assam for favour of information.
2. The Incharge, Central Laboratory, PCBA for information & necessary action.
3. M/s. Enviro Testing Services, Bijoy Nagar, House No.35, Noonmati, Guwahati-22,Kamrup (M) for information and necessary action.

Member Secretary

Annexure-A(i)

LIST OF PARAMETERS MENTIONED BELOW:-

A. Water & Waste Water

Sl. No	Parameters	Sl. No	Parameters
1	pH	27	Ammonical Nitrogen
2	Temperature	28	TKN
3	TSS	29	Phosphate
4	Zinc	30	Iron
5	BOD	31	Lead
6	COD	32	Copper
7	Total Dissolved Solids	33	Nickel
8	Chloride	34	Cr (Total & Hexa)
9	Sulphate	35	Cadmium
10	Oil & Grease	36	Aluminium
11	Sodium	37	Manganese
12	Phenol	38	Arsenic
13	Odour	39	Insecticides
14	Turbidity	40	Total Acidity
15	Alkalinity	41	DO
16	Conductivity	42	Cobalt
17	Total Hardness	43	Vanadium
18	Calcium hardness	44	Molybdenum
19	Magnesium Hardness	45	Silver
20	Nitrate	46	Hydrazine
21	Sulphite	47	Silica
22	Fluoride	48	Colour
23	Residual Chloride	49	Anionic Detergent
24	Boron	50	TVC
25	Free Ammonia	51	MLSS
26	Sulphide	52	Nitrite

B. Bacteriology & Bio-Assay

Sl. No	Parameters
1	Total Coliform
2	Fecal Coliform

C. Noise Parameter

Noise Level Monitoring - Noise in dB(A)

Annexure-A(ii)

D. Ambient Air Parameters

Sl. No	Parameters	Sl. No	Parameters
1	Oxides of Sulphur	8	Benzene
2	Oxides of Nitrogen	9	Benzo (a) Pyrine
3	PM 10	10	Arsenic
4	PM 2.5	11	Nickel
5	Ozone	12	Total Hydrocarbon
6	Lead	13	Formaldehyde
7	Carbon Monoxide	14	Ammonia

E. Stack Parameters

Sl. No	Parameters	Sl. No	Parameters
1	Oxides of Sulphur	7	Nickel
2	Oxides of Nitrogen	8	Hydrogen Sulphide
3	Particulate Matter	9	Carbon Dioxide
4	Oxygen	10	Hydrogen Fluoride (HF)
5	Carbon Monoxide	11	Vanadium
6	Hydrochloric Acid Vapour & Mist (HCl)	12	Chlorine

F. Parameters For Soil Analysis

Sl. No	Parameters	Sl. No	Parameters
1	pH	9	Phosphorous
2	Soil Type	10	Manganese
3	Water Holding Capacity	11	Nitrogen
4	Iron	12	Sodium
5	Organic Matter	13	Potassium
6	Copper	14	SAR
7	Nickel	15	Boron
8	Chlorides	16	Zinc

G. Fugitive Emission (LEL-CH_4),

Light Intensity (Lux Meter),
VOC

H. Work Zone Monitoring

I. Waste Sludge Parameters (Non Hazardous & Hazardous)

Member Secretary
Pollution Control Board, Assam

भारत सरकार
Govt. of India
सूक्ष्म, लघु और मध्यम उद्यम मंत्रालय
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES

उद्योग आधार Udyog Aadhaar

D

Type of Enterprise	Micro	Small	Medium
Manufacturing	A	B	C
Services	D	E	F
UAN	AS03D0000207		

GM-DIC - KAMRUP METROPOLITAN

Udyog Aadhaar Memorandum

1	Name of Entrepreneur	SATYA NATH GOSWAMI
2	Social Category	GENERAL
3	Name of Enterprise	ENVIRO - TESTING SERVICES
4	Type of Organization	
5	Postal Address	H. NO. 35, BIJAY NAGAR, NOONMATI, GUWAHATI - 781020, ASSAM. District: KAMRUP METROPOLITAN State: ASSAM PIN: 781020 Mobile No: 9435707936 Email: envirotesting2011@gmail.com
6	Date of commencement	15/12/2001
7	Previous Registration details-if any	::
8	Bank Details	IFS Code: SBIN0006196 Bank Account: 30368995867
9	Major Activity	SERVICES

11

SN	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit Code	Activity Type
1	71 - Architecture and engineering activities; technical testing and analysis	7120 - Technical testing and analysis	71200 - Technical testing and analysis	Services

11	Persons employed	10
12	Investment (Plant & Machinery / Equipment's)	10(Rs. In Lakhs)
13	District Industry Centre	KAMRUP METROPOLITAN

Declaration

I hereby declare that information given above is true to the best of my knowledge. Any information, that may be required to be verified, shall be provided immediately before the concerned authority.

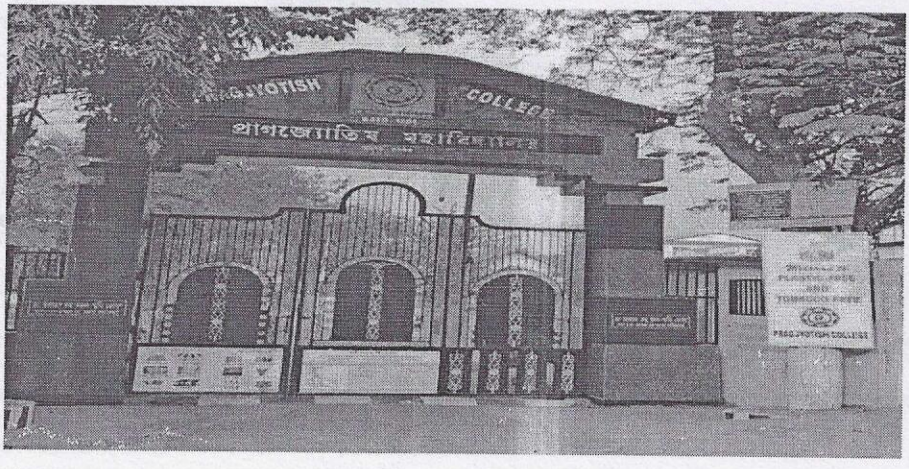
PRINT

Click here for Udyog Aadhaar Acknowledgement

GREEN AND ENVIRONMENT AUDIT REPORT

[2022 – 2023]

FOR



PRAGJYOTISH COLLEGE
SANTIPUR, GUWAHATI-781009, ASSAM, INDIA

Conducted By

PRINCIPAL
PRAGJYOTISH COLLEGE
BHARALUMUKH
GUWAHATI - 9

ENVIRO-TESTING-SERVICES

BIJAY NAGAR, NOONMATI, GUWAHATI-781020, ASSAM

MAY-2023

GREEN AND ENVIRONMENT AUDIT REPORT
[2022 – 2023]

FOR

PRAGJYOTISH COLLEGE
SANTIPUR, GUWAHATI-781009, ASSAM, INDIA

Conducted By

ENVIRO-TESTING-SERVICES

BIJAY NAGAR, NOONMATI, GUWAHATI-781020, ASSAM

May-2023

01	*8-05-2023*	Pragjyotish College Santipur, Guwahati-781009, Assam, India		
No.	Date	Description	Checked	Approved
ETS, ENVIRO-TESTING-SERVICES Guwahati	A Report on Green and Environment Audit (2022 – 2023)		*Job No. :ETS /KM /GEAR/ 01 dated 8/05/2023*	
			Doc: Final Report	

ETS-GUWAHATI
ENVIRO-TESTING-SERVICES
Accredited by SPCB Assam, ISO 9001, ISO 45001, MSME
Bijoy Nagar, House No – 35, Noonmati, Guwahati -781020, Assam
Telephone : 91(0) 3612551788, 919435492765, Email : envirotesting2011@gmail.com

Ref: ETS/PC/GEAR/01/2023 **Date: 8th May 2023**

COMPLETION CERTIFICATE

This is a Green and Environmental Audit report compiled on the basis of field survey and field investigation of various environmental components such as Land Use Land Cover, Micro meteorological Quality, Ambient Air Quality, Drinking Water Quality, Soil Quality, Noise Quality, Illumination Level, Carbon Footprint, Flora, Fauna along with environmental and Energy management practices.

The present work was carried out at the request of the Principal, Pragjyotish College, Santipur, Guwahati, Assam-781009 vide order number PC /Green & Env Audit/Invitation/2022-23 Dated 18.03.2022. The findings of the study carried out during the period of May 2022 to April 2023 are presented in this report. All the Analysis of Environmental Quality Parameters is done at the laboratories of Enviro Testing Services, Noonmati, Guwahati. The Laboratory is duly recognised by State Pollution Control Board, Assam, ISO 9001 :2015; ISO 45001:2018 and MSME.

For Enviro Testing Services

(Dr. Hrishikesh Sarma)
Ex. Director, ETS, Guwahati

Date: 8.05.2023

ETS-GUWAHATI
ENVIRO-TESTING-SERVICES
Accredited by SPCB Assam, ISO 9001, ISO 45001, MSME
Bijoy Nagar, House No – 35, Noonmati, Guwahati -781020, Assam
Telephone : 91(0) 3612551788, 919435492765, Email : envirotesting2011@gmail.com

ACKNOWLEDGEMENT

Green and Environment Audit Assessment Team thanks Dr. Manoj Kumar Mahanta, Principal, Pragjyotish College for assigning this important work of Green and Environment Audit. We appreciate the cooperation to us for completion of the study.

We would like to convey our sincere thanks to all the Heads of the various Departments of Pragjyotish College for giving us necessary inputs to carry out this very vital exercise of Green Audit.

Our special thanks go to the faculty of Pragjyotish College:

Dr. Jyoti Prasad Das, Department of Geography

Mr. Amit Kumar Pradhan, Department of Botany

Mr. Bhrigu Kumar Nath, Department of Geography

Mr. Himadri Saikia, Department of Botany

We are also thankful to other staff members who were actively involved while collecting the data and conducting field survey

For Enviro Testing Services

(Dr. Hrishikesh Sarma)
Ex. Director, ETS, Guwahati

Date: 8.05.2023

Contents

1.0 Introduction of the Institute

1.1 Brief Introduction

Pragjyotish College, established on 1st September 1954, seven years after Independence, became a beacon of learning and a symbol of aspirations for the common people of Assam, raring to build a new nation. Pandit Tirthanath Sarma, eminent scholar and litterateur, responded to and actively participated in the nation building by taking charge as the founder Principal of Pragjyotish College. From its modest inception as an arts college, Pragjyotish College has now developed into one of the premier institutions of higher education in Guwahati. At present, it is a well-known full-fledged under-graduate college imparting higher education in multiple streams.

Situated on the western bank of the Bharalu, a rivulet, in the western part of Guwahati, Pragjyotish College is about 1 kilometre away from its confluence with the mighty Brahmaputra. It is about 4 kilometres from the Guwahati Railway Station and at a distance of about 20 kilometres from the Lokapriya Gopinath Bordoloi International Airport. At the backdrop of the college is a beautiful panoramic view of Nilachal Hills, the famous abode of Mother Goddess Kamakhya.

In the emblem of the college, is ingrained the motto "तेजस्विनावधीतमस्तु" (May our study make us illumined) and a conch shell at the centre on an eight-petalled full-blown beautiful-lotus, which symbolizes pure knowledge and the relationship between the teacher and the learner, praying to the Almighty for energy, protection, maintenance that ultimately leads to peace and bliss.

Motto of the College

Tejasvinavadhitamastu (May our study make us illumined)

Vision

To fulfill the visionary aspirations of the regional youth segment through a process of vibrant and continuous innovations and initiatives in multiple spheres of academic as well as professional development, leading to the fullest realisation of the potential of the students.

Mission

- To make teachers and the taught partners in the learning process.
- To promote a student friendly atmosphere for encouraging them to be self-reliant and self-employable.
- To promote extra-curricular activities simultaneously with curricular activities.
- To mould the students into socially conscious human beings.
- To encourage students to think globally and act locally as productive citizens, through the promotion of scientific temper and action.
- To foster and inculcate moral and spiritual accomplishments amongst the students.
- To develop a transparent and responsive administration.
- To undergo self-analysis and self-discovery leading to elimination of bottlenecks in the context of a holistic framework

In its glorious existence of six decades, Pragjyotish College, as alma mater, has produced a galaxy of eminent personalities in all walks of life. The college celebrated its Diamond Jubilee Year during 2013–14.

1.2 Location of the College Campus

Location	:	Urban
Campus Area	:	7.35 Acres
Built Up Area	:	1.95 Acres

1.3 Physical Structure of the College Campus

Total No of Departments	:31
Auditorium	:01
Hostel	:01
Cafeteria	:01
Health Centre	:00
Heritage Corner	:01
Stationery Corner	:00
Gymnasium	:01
Teachers Common Room	:01
Libraries	:01

1.4 Student, Teacher & Employees Strength

Total Number of Students	: 4027
Total Number of Teachers	: 83
Total Number. of Employees	: 20 (non-teaching)

2.0 Brief Outlines of Green Audit

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of organization. It aims to analyse environmental practices within and outside of the concerned place, which will have an impact on the eco-friendly atmosphere. Green audit is a valuable means for a college to determine how and where they are using the most energy or water or other resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus. If self-enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental

sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more predominant. The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institutes which will lead for sustainable development and at the same time reduce a sizable amount of atmospheric CO_2 from the environment.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Green Audit is assigned to the Criteria 7 of NAAC, which is a self-governing organization of India that accredits the institution according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through carbon footprint reduction measures.

3.0 Objective of Green Audit

(i) Landuse & Built-up Environment

(ii) Geographical Location with Campus Map

(iii) Present status of Micro meteorology, Ambient air, Noise, Soil quality and Water quality

(iv) Floral and Faunal diversity

(v) Management Practices with respect to Water, Waste and Energy

(vi) Carbon footprint

(vii) Organizational Level Efforts

4.0 Methodology

Methodology includes

(i) Physical inspection of the campus

(ii) Collection of Primary & Secondary Data

(iii) Observation and review of the documentation

(iv) Data analysis

5.0 Objective wise Analysis

5.1 Landuse & Built-up Environment

It encompasses area about 30351.42 sq. mts. Total built-up area is 17199.14 sq.mts. out of the total 30351.42 sq. mts of the campus. Both Assam type and multi-storied RRC construction are found within the campus. The play ground inside the college campus covering an area of about 5058.57 sq mts. The presence of garden inside the campus augments the aesthetic value of the college.

The area coverage of different land use classes

Features	**Area (**Acres**)**
Building	1.96
Statue	0.02
Playground	0.21
Roads (inside campus)	0.84
Trees	1.34
Parking Area	0.22
Garden	1.46
Open space	1.30
Total Area	**7.35**

5.2 Geographical Location with Campus Map

Pragjyotish College is situated at Shantipur, Guwahati, Kamrup(M) district of Assam, within the geo-position

Latitude N 26.253836^0

Longitude E 92.357961^0

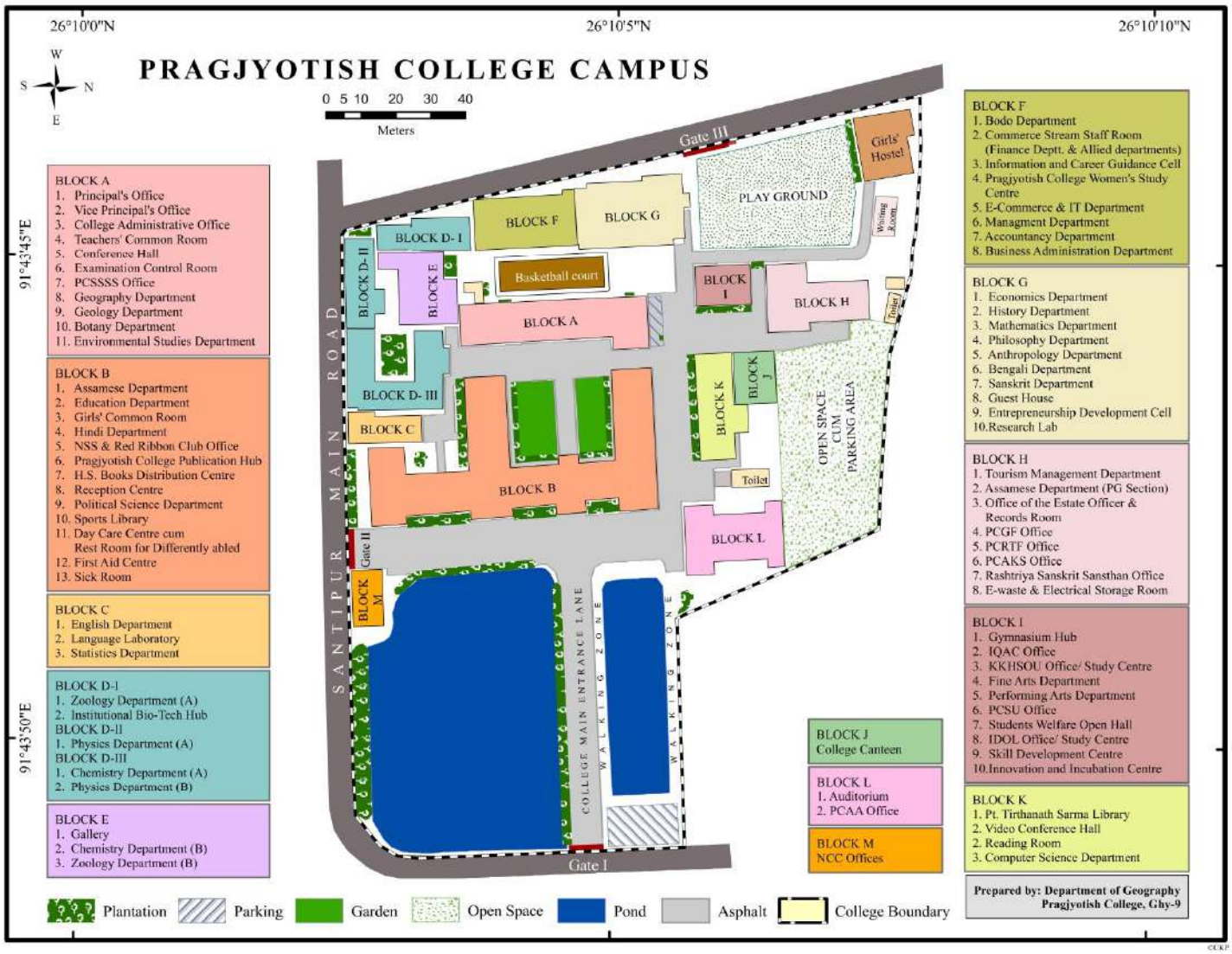


Fig 1: Map of the Pragjyotish College

Glimpses of Pragjyotish College

5.3 Present status of Micrometeorology, Ambient air, Water quality and Soil Quality

5.3.1 Micrometeorology Status

Monitoring Station	**Date**	**GPS Coordinate**
Micrometeorology	16.02.2023	N $26^0 10' 6.88''$ E $91^0 43' 47.91''$

Table 1 : **Micrometeorological Study at Pragjyotish College**

S/N	Parameters	Unit	Metrological Data at Pragjyotish College Date: 16.02.2023	
1	Temperature	^{0}C	Min	16
			Max	22
2	Relative Humidity	%	10.30am	64
			16.30pm	71
3	Wind Speed	Km/hr	10.30am	3.8
			16.30pm	4.1
4	Wind Direction	-	10.30am	NE
			16.30pm	SE

5.3.2 Ambient Air Quality

The average results obtained in the month of February 2023 at Pragjyotish College are presented in Tables 2. All the results meet the National Ambient Air Quality (NAAC) standards.

Monitoring Station	**Date**	**GPS Coordinate**
Ambient Air Quality	16.02.2023	N $26^0 10' 6.88''$ E $91^0 43' 47.91''$

Table 2: Ambient Air Quality at Pragjyotish College

AMBIENT AIR QUALITY						
Duration (24 Hour)			Average			
S/N	Parameters	Unit	Concentration	Limit	Weather Condition*	Test Method
1	Particulate Matter (PM10)	µg/m^3	86.4	100	Clear	IS5182(23)
2	Particulate Matter (PM2.5)	µg/m^3	54.2	60		CPCB Guideline
3	Sulphur Dioxide (SO_2)	µg/m^3	7.8	80		IS5182(2)
4	Nitrogen Dioxide(NO_2)	µg/m^3	9.1	80		IS5182(vi)
5	Pb in PM 10	µg/m^3	<0.2	1.0		IS5182(vi)
6	Pb in PM2.5	µg/m^3	<0.2	1.0		IS5182(vi)
7	Ni in PM10	ng/m^3	<0.2	20		IS5182(vi)
8	Ni in PM2.5	ng/m^3	<2.0	20		IS5182(vi)
9	As in PM10	ng/m^3	BDL	06		IS5182(vi)
10	As in PM2.5	ng/m^3	BDL	06		IS5182(vi)

5.3.3 Noise Quality study

In the present study, the noise level measurements were recorded using a precision sound level meter (Envirotech SLM100) with a measuring range between 0-150 dB. The instrument is calibrated before the measurements are recorded. The microphone was placed at 1.0 m from the facades of house, away from any reflecting surface and 1.2 m above the ground. In each location, adequate number of samples was taken at 10-minute intervals. The noise levels were recorded during day time and meteorological conditions: no wind no rain. The Noise Level Monitored (Table 3) and analyzed is found to be within the CPCB Prescribed Limit

Table 3: Noise Quality at Pragjyotish College

S/N	Locations	**GPS Co-ordinate**		Daytime SPL(dB) [6 am to 10 pm]		CPCB Limit SPL(dB)
				Leq	Range	
1	College Main Gate	N $26^0 10' 3.59''$	E $91^0 43' 50.96''$	71.2	58 – 71	75
2	Near Principal Office	N$26^0 10' 5.718''$	E $91^0 43' 49.037''$	64.2	51 – 66	
3	Near Library	N$26^0 10' 5.968''$	E$91^0 43' 46.8282''$	58.1	48 – 61	
4	Near Conference Hall	N$26^0 10' 4.73''$	E$91^0 43' 45.47''$	61.2	54 – 68	
5	Room no C001	N$26^0 10' 3.28''$	E$91^0 43' 47.002''$	54.1	56 - 65	
6	Room no E001	N$26^0 10' 3.53''$	E$91^0 43' 45.390''$	56.4	54 - 66	
7	Room no B3	N$26^0 10' 5.79''$	E$91^0 43' 46.128''$	57.4	52 - 64	
8	Near Canteen	N$26^0 10' 6.43''$	E$91^0 43' 46.64''$	57.6	54 – 67	

5.3.4 Drinking Water Quality

Drinking Water and Pond Water samples were collected from various locations of Pragjyotish College and the sampling locations are as follows

Sr.No.	Sampling Locations	GPS Co-ordinate	
1	Pond Water Near College Gate (PW)	N26^{0}10′4.51″	E91^{0}43′50.04″
3	Inside college drinking water facility (DW)	N26^{0}10′4.54″	E 91^{0}43′46.38″

Results of analysis of the most relevant water quality parameters are given in Tables 4. The test method for all the parameters along with tolerance limit as suggested by IS-10500 is presented in Table 3. All the parameters with respect to drinking water quality are found to be within the tolerance limit as suggested by IS: 10500.

Table 4: Various Test Methods of Water Quality Monitoring at Pragjyotish College

S/N	Parameters	Test Methods	IS-10500
1	Odour	APHA 20th Edition, 2150 B	Unobjectionable
2	Temperature (^{0}C)	Thermometry Method	50
3	Turbidity (NTU)	APHA 20th Edition, 2130B	5
4	pH	APHA 20th Edition, 4500-H+B	6.5 – 8.5
5	Conductance (mS/cm)	APHA 20th Edition, 2510B	-
6	Total Dissolved Solid (mg/L)	APHA 20th Edition, 2540 B	500
7	Total Suspended Solid (mg/L)	APHA 20th Edition, 2540 B	-
8	Chloride (mg/L)	APHA 20th Edition, 4500-Cl-B/D	250
9	Residual Chlorine (mg/L)	APHA 20th Edition, 4500-Cl-B	0.2
10	Sulphates as SO_4 (mg/L))	APHA 20th Edition, 4500-SO_4^{2-}E	250
11	Nitrate (mg/L)	APHA 20th Edition, 4500-NO_3-B	45
12	Fluoride (mg/L)	APHA 20th Edition, 4500-F^- D	1
13	Calcium (mg/L)	APHA 20th Edition, 3500 B	75
14	Magnesium (mg/L)	APHA 20th Edition, 3500 B	-
15	Iron (mg/L)	APHA 20th Edition, 3111 B	0.3
16	Manganese	APHA 20th Edition, 3111 B	0.1
17	Zinc	APHA 20th Edition, 3111 B	5
18	Arsenic	APHA 20th Edition, 3112 B	0.01
19	Total Coliform (MPN/100 mL)	APHA 20th Edition, 3111 B	0
20	Faecal Coliform (MPN/100 mL)	APHA 20th Edition, 9221 E	0

Table 5 : Results of Water Quality Monitoring at Pragjyotish College

S/N	Parameters	Unit	DW	PW
1	Odour	--	NS	NS
2	Temperature (^{0}C)	^{0}C	24	25
3	Turbidity (NTU)	NTU	0.3	3.1
4	pH	-	7.1	7.8
5	Conductance (mS/cm)	mS/cm	0.46	0.64
6	Total Dissolved Solid (mg/L)	mg/L	61.0	141.0
7	Total Suspended Solid (mg/L)	mg/L	26.0	68.4
8	Chloride (mg/L)	mg/L	24.1	28.6
9	Residual Chlorine (mg/L)	mg/L	<0.01	<0.01
10	Sulphates as SO_4 (mg/L))	mg/L	7.1	12.6
11	Nitrate (mg/L)	mg/L	6.8	8.2
12	Fluoride (mg/L)	mg/L	0.31	0.24
13	Calcium (mg/L)	mg/L	24.6	28.2
14	Magnesium (mg/L)	mg/L	26.2	29.7
15	Iron (mg/L)	mg/L	0.13	1.1
16	Manganese	mg/L	0.002	0.004
17	Zinc	mg/L	0.003	0.04
18	Arsenic	mg/L	<0.001	<0.001
19	Total Coliform (MPN/100 mL)	mg/L	03	10
20	Faecal Coliform (MPN/100 mL)	mg /L	NIL	10

5.3.5 Quality of Soil in the Study Area

Soil sample collected locations of the study area is as follows.

Sr.No.	Sampling Locations	GPS Co-ordinate	
1	Near Garden Area	$N26^{0}10'4.51''$	$E91^{0}43'50.04''$

It was analyzed for the most relevant physical and chemical parameters. It may be noted from the results of analysis that many of the soil samples have acidic pH . The presence of N, P, K and organic matter content is considerable for all the locations.

Table 6: Results of Soil Quality Monitoring at Pragjyotish College

S/N	Parameters	[S1]
1	PH (1: 2)	6.6
2	Conductance (ms)	0.36
3	Sand (%)	87.4
	Silt (%)	1.02
	Clay (%)	11.5
4	Water Holding Capacity (%)	46.8
5	Bulk Density (gcm^{-3})	1.1
6	Cation Exchange capacity (meq/kg)	0.36
7	Nitrogen (%)	0.08
8	Potassium (mg/kg)	17.4
9	Sodium (mg/kg)	22.6
10	Calcium (g/kg)	26.4
11	Magnesium (mg/kg)	34.2
12	Phosphorous (mg/kg)	14.8
13	Organic matter (%)	0.71
14	Sodium Absorption Ratio (SAR)	1.6
15	Zinc (mg/kg)	18.2
16	Copper (mg/kg)	6.8

5.3.6 Illumination Study

Adequate, well-balanced levels of illumination are essential in establishing safe and productive working conditions. Good lighting plays an important role in safeguarding health at work by enabling employees to perform their work comfortably and efficiently. Accordingly, there should be an appropriate level of the light falling on the surface on which workers are working. Excessive contrast, strong glare and light flickering in their fields of vision are also inappropriate.

To ensure good lighting the person responsible for a workplace should arrange for a suitable assessment on the lighting levels in the workplace. Good lighting can decrease errors by 30-60 % as well as decrease eye-strain and the headaches, nausea, and neck pain which often accompany eyestrain.

The Lux Levels were measured during day time in the college campus as well as in the office buildings. In this present study the Installed load Efficacy Ratio (IIER) are calculated as per BEE Lighting Code.

1	**A**	**B**	**C**	**D**
2		**Equation**	**Value**	**Unit**
3	Time of Measurement		Day time	
4	Room Identification			
5	Number Of lamps			
6	Length of the room			m
7	Width of the room			m
8	Floor Area	A=Length*Width		m^2
9	Height of the lamp from the Plane of measurement			m
10	Room index	(L*W)/Hm*(L+W)		
11	Average room illuminance	(Max+Min.lux)/2*Correction factor		lux
12	Measured/estimated circuit power			W
13	Installed lighting Efficacy	(Avg.illum*Floor area)/Circuit watts		lm/W
14	Target lighting efficacy			lm/W
15	Installed lighting Efficacy ratio (ILER)	Installed lighting efficacy/Target lighting efficacy		

Installed lighting Efficacy ratio (ILER)	**Assessment**
0.75 or above	Satisfactory to good
0.51 to 0.74	Review suggested
0.5 or less	Urgent action required

Table 7: Results of Installed lighting Efficacy ratio (ILER) at Pragjyotish College

S/N	Location	ILER	Assessment
1	Room No. B1	2.78	Satisfactory
2	Room No. B3	2.58	Satisfactory
3	Room No B14	2.38	Satisfactory
4	Room No C001	2.78	Satisfactory
5	Room No E001	2.91	Satisfactory
6	Office of the Principal	2.28	Satisfactory
7	Library	2.18	Satisfactory
8	Conference Hall	2.68	Satisfactory

Ambient Air and Noise Monitoring at Pragjyotish College

Illumination Study at College Premises

Soil and water Sampling at different locations of Pragjyotish College

Photographic view of Environmental Monitoring at Pragjyotish College

5.4 Floral and Faunal diversity

5.4.1 Floral Biodiversity

The survey was conducted in the month of February and March 2023 following the Quadrat sampling procedure. In the study area the vegetation is a complex of plant communities with considerable diversities. Since the plants showed normal and very good growth, there appears to be no adverse environmental factors prevailing in the area.

Plants of all types, in general, showed healthy and luxuriant growth in terrestrial, aquatic and aerial habitats in the study areas. Leaf diseases (leaf spot and shot-holes) on the aerial parts of the plants were very infrequently observed and did not show any adverse effect on the growth of the plants.

In this present study, different types of flora along with the total of species of the respective flora identified in the college campus are as follows.

Different types of flora		Total number of species
Tree	:	145
Shrubs	:	72

List of trees are presented in Table- 7 - 8

Table 7 : List of Trees recorded at Pragjyotish College

S/N	Family	Scientific name	Vernacular name	English Name	Uses	No.
1	Myrtaceae	*Psidium guajava L.*	Modhuriaam	Guava	Fruitis edible, young leaves are edible	**10**
2	Rhamnaceae	*Ziziphus jujube Mill.*	Bogori	Jujube	Fruitsedible	**3**
3	Meliaceae	*Azadiracta indica Nees.*	Neem	Indianlilac	Seed oil is used as pesticides and Insecticides	**10**
4	Combretaceae	*Terminalia bellirica Roxb.*	Bhomora	Beleric myrobalan	Dried fruits are used as medicine	**1**
5	Rubiaceae	*Neolamarckia cadamba*	Kadam	Burflower tree	Shade tree	**6**
6	Fabaceae	*Cassia fistula*	Sonaru	Goldens hower	Avenue tree	**2**
7	Moraceae	*Ficus religiosa*	Aahot	Peepal	Bark and ripe fruits are used in treatment of asthma	**1**
8	Myrtaceae	*Syzygium cumini*	Kolajamu	Javaplum	Fruitis edible	**3**
9	Arecaceae	*Areca catechu L.*	Tamul	Betelnut	Nut is chewed with betel leaf and works as digestive.	**2**
10	Annonaceae	*Monoon longifolium*	Debadaru	Masttree	Ornamental	**12**
11	Arecaceae	*Cocos nucifera*	Narikol	Coconut	Fruitis edible	**2**
12	Sapotaceae	*Mimusops elengi L.*	Bokul	Spanish cherry	Ornamental	**13**
13	Caesalpinaceae	*Delonix regia*	Krishnasura	Flame tree	Ornamental	**3**
14	Fabaceae	*Dalbergia sissoo*	Sisoo	Indian Rosewood	Avenue tree, Timber is used for making Furnitures	**10**
15	Anacardiaceae	*Mangifera indica L.*	Aam	Mango	Fruits Edible	**5**
16	Myrtaceae	*Syzygium jambos*	Bogijamu	Roseapple	Fruits edible	**1**
17	Putranjiviaceae	*Putranjiva rouxburghii Wall.*	Putranjivi	Child life tree	Leaves are used to treat skin disorders, seed oil is used in siddha and unani practices.	**3**
18	Santalaceae	*Santalum album L.*	Chandan	Sandal wood	Used for skin care and beauty purpose	**2**

19	Fabaceae	*Pterocarpus santalinus*	Rokto chandan	Red sandal wood	Used for skin care and beauty purpose	**3**
20	Lamiaceae	*Tectona grandis*	Segun	Teak	Wood is used in many Purpose	**1**
21	Araucariaceae	*Araucaria columnaris*		Christmas pine	Ornamental	**6**
22	Lythraceae	*Lagerstroemia speciosa*	Ajar	Queen flower	Ornamental	**5**
23	Comretaceae	*Terminalia chebula*	Hilikha	Chebulic myroabalan	Fruit is edible	**8**
24	Fabaceae	*Peltophorum pterocarpum*	Radhachura	Copperpod	Ornamental	**1**
25	Dilleniaceae	*Dillenia indica*	Ou tenga	Elephant apple	Fruits are edible	**1**
26	Musaceae	*Musa paradisica L.*	Kolgos	Banana	Whole plant along with fruits are edible	**10**
27	Myrtaceae	*Eucalyptus maculata Hook.*		Spotted Gum	Provide wood , gum and oil is used as medicine	**7**
28	Phyllanthaceae	*Phyllanthus emblica*	Aamlakhi	Gooseberry	Fruitis edible	**2**
29	Rubiaceae	*Gardenia angusta L.*	Togor	Cape jasmine	Ornamental	**1**
30	Moraceae	*Ficus racemosa*	Dimoru	Cluster fig	Ornamental	**1**
31	Arecaceae	*Dypsis lutescens*	Momai tamul	Golden canepalm	Fruitsareedible	**5**
32	Myrtaceae	*Melaleuca viminalis*		Weeping bottle brush	Ornamental	**1**
33	Combretaceae	*Termanalia arjuna*	Arjun	Arjun tree	Bark has medicinal properties,usedto treat many diseases	**3**
34	Moraceae	*Ficus rumphii*	Pakari bor	Mock Bodh tree	Shade tree	**1**
35	Fabaceae	*Acacia auriculformis*	Akashmoni	Earleaf acacia	Ornamental plant	**1**
35	Rutaceae	*Aegel marmelos*	Bael	Golden apple	Fruits are edible	**1**
36	Moraceae	*Artocarpus heterophyllus*	Kothal	Jackfruit	Fruit is edible	**2**
37	Fabaceae	*Leucaena leucochephala*	Subabul	River tamarind	Shade tree	**1**
38	Arecaceae	*Phoenix dactylifera*	Khejoor	Date palm	Fruits are edible	**5**
39	**Fabaceae**	***Albiiz lucidior***	**Moj**	**Potka Siris**	**Shade tree**	**1**

Table 8 : List of Shrubs recorded at Pragjyotish College

SL no.	Family	Scientific name	Vernacular Name	English name	Uses	No.
1	Malvaceae	*Gossypium arboreum*	Kopah	Cotton	Seed hairs are used in textile industry.	**1**
2	Apocyanaceae	*Tabernaemontana divaricata*	Kathana	Jasmine	Ornamental	**3**
3	Apocyanaceae	*Cascabela thevetia*	Korobi	Yellow Oleander	Ornamental	**3**
4	Rosaceae	*Photinia sp.*	Lalbati	Christmas berry	Ornamental	**16**
5	Cycadaceae	*Cycas circinalis*	Cycas	Cycas	Ornamental	**3**
6	Cupressaceae	*Cryptomeria spp.*		Cryptomeria	Ornamental	**8**
7	Rutaceae	*Citrus limon*	Kajinemu	Lemon	Fruits edible	**5**
8	Apocyanaceae	*Calotropis gigantea*	Aakon	Milkweed	Gum is used to treat skin disease traditionally	**5+**
9	Fabaceae	*Bauhinia purpurea*	Kanchan	Camelfoot tree	Ornamental	**5**
10	Rubiaceae	*Mussaenda erythrophylla*	Mussanda	Mussanda	Ornamental	**2**
11	Rubiaceae	*Ixora coccinia L.*	Ashok	West Indian Jasmine	Ornamental	**7**
12	Euphorbiaceae	*Codiaeum variegatum*	Pataa bahar	Golden dust croton	Ornamental	**5**
13	Euphorbiaceae	*Riccinus communis*	Eragos	Castor	Castor oil obtained	**5+**
14	**Cupressaceae**	***Thuja ocidentalis***	**Mayurpakhi**	**Thuja**	**Ornamental**	**9**

Eucalyptus maculate Hook.

Ficus racemosa

Cycas circinalis

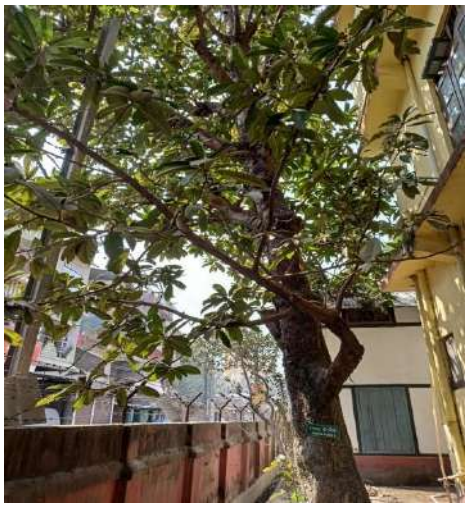
Phoenix dactylifera

Psidium guajava L.

Pterocarpus santalinus

Photinia spp.

Dypsis lutescens



Dillenia indica L.

Syzygium jambos

Photographic View of the Floral Diversity at Pragjyotish College

5.4.2 Faunal Biodiversity

In view of the need to determine the faunal characteristics of the study areas within the constraints of time, a checklist survey method was followed. Checklist surveys are employed primarily to confirm the presence of species, and sometimes the number of individuals of species in a surveyed area.

The survey was conducted during February – March 2023. The natural landscape of Pragjyotish college campus includes green vegetation covers, botanical Garden, open water bodies and marshy land which provides a unique environmental setting conducive for a wide range of floral and faunal diversity. The campus is rich in animals that includes different animal species belonging to the Phylum Arthropoda and Chordata. Among Arthropods 18 species of butterfly and 4 species of Spiders were recorded. Among Chordates, 11fishes, 4 amphibians, 7 reptiles, 16 birds and 5 mammalian fauna were recorded in the college campus.

Table 9 : Different butterfly species recorded at Pragjyotish College Campus

Serial No.	Common Name	Scientific Name
1	Grey Pansy	*Junonia alites*
2	Common palmfly	*Elymnias hypermnestra*
3	Black veined Albatros	*Appias olferna*
4	Great eggfly	*Hypolimnas bolina*
5	Small branded swift	*Pelopidas mathias*
6	Himalayan Spangle	*Papilio protenor*
7	Common Mormon	*Papilio polytes*
8	Red Helen	*Papilio helenus*
9	Lime(Swallowtail)	*Papilio demoleus*
10	Black and white helen	*Papilio nephelus*
11	Common crow	*Eupolea core*
12	One Spot grass yellow	*Eurema andersonii*
13	Indian cabbage white	*Appiascanidia*
14	Lemon Pansy	*Junonia lemonias*
15	Common mime	*Papilio clytia*
16	Common banded demon	*Notocrypta paralysos*
17	Chocolate demon	*Ancistroides nigrita*
18	Tailed Joy	*Graphium agamemnon*
19	Bush hopper	*Ampittia dioscorides camerta*
20	Dark blue tiger	*Tirumala septentrionis*


Bush hopper


Common palmfly


Dark blue tiger


Common crow


Grey Pansy


Birdwing

Photographic View of the Fnunal Diversity at Pragjyotish College

Table 10: Different species of spider recorded in the college campus

Serial No.	Scientific Name
1	*Argiope pulchella*
2	*Phintella vittata*
3	*Nephilia pilipes*
4	*Ampittia dioscorides camerta*

Table11: Different fishes recorded in two ponds of the college

S.NO	Scientific Name of Fish	Common Name
1	*Channa punctatus*	Goroi
2	*Channa striatus*	Shol
3	*Cyprinus carpio*	Common carp
4	*Amblypharyngodon mola*	Moa
5	*Catla catla*	Bhakua
6	*Cirrhinus mrigala*	Mirika
7	*Puntius sophore*	Senduri puthi
8	*Clarius batrachus*	Magur
9	*Heteropneustes fossilis*	Singi
10	*Monopterus cuchia*	Kuchia
11	Labeo rohita	Rohu
12	Anabus testudineus	Kawoi
13	*Mystus vittatus*	Tengra

Table12: Different species of amphibia found in the college campus

Serial No.	Name
1	*Bufo melanostictus*
2	*Rana tigerina*
3	*Euphlyctis cyanophlyctis_*
4	*Microhyla ornata*

Table13: Different species of reptiles found in the college campus

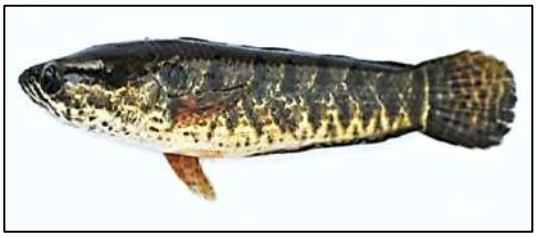
Serial No.	Name
1	*Bungarus fasciatuS*
2	*Enhydris enhydris*
3	*Ptyas mucosa*
4	*| Lycodon aulicus*
5	*Ahaetula nasutus*
6	*Sphenomorphus macculalus*
7	*Eutropis carinata*

Table14: Different species of Mammals found in the college campus

Sl No.	Name of Species
1	*Macaca mulatta*
2	*Herpestes javanicus*
3	*Rattus Sp.*
4	*Pteropus giganteus*
5	*Pipistrellus coromandra*

Table15: Different species of birds found in the college campus

Sr. No.	Common Name	Scientific Name
1	Coppersmith Barbet	*Megalaima haemacephala*
2	Black Drongo	*Dicrurus macrocercus*
3	Indian Jungle Crow	*Corvus culminatus*
4	Common Myna	*Acridotheres tristis*
5	Spotted Dove	*Spilopelia chinensis*
6	Oriental Magpie Robin	*Copsychus saularis*
7	*White-breasted kingfisher*	*Halcyon smyrnensis*
8	House Sparrow	*Passer domesticus*
9	Red Vented Bulbul	*Pycnonotus cafer*
10	Purple Sunbird	*Cinnyris asiaticus*
11	Asian Pied Starling	*Gracupica contra*
12	Blue Throated Barbet	*Megalaima asiatica*
13	House crow	Corvus splendens
14	Jungle Myna	*Acridotheres fuscus*
15	Asian barred owlet	*Glaucidium cuculoides*
16	Asian Koel	*Eudynamys scolopaceus*



Channa punctatus

Catla catla

Labeo rohita

Anabus testudineus

House crow

Blue Throated Barbet

Asian Pied Starling

White-breasted kingfisher

Asian Pied Starling

Black Drongo

Photographic View of the Faunal Diversity at Pragjyotish College

5.5 Management Practices with respect to Water, Energy and Waste

5.5.1 Water Management Practices

- Water Storage per day= 13000. Lt
- Water Tank Cleaning=Twice per Annum
- Daily Consumption of water= 12,500 Lt

S/N	Location	Number of storage tank	Capacity
1	ADM Building	2	2000
2	RUSA Building	2	3000
3	Commerce Building	2	2000
4	Heritage Building	1	2000
5	Girls Common Room	1	1000
6	Girls'Hostel	3	3000

Observations

(i) No leaking taps, pipes, valves were identified in the college premise.

(ii) There are no any push button taps

(iii) The college has set-up the one rain water harvesting unit capacity 1000 L within the college campus. The stored water is mainly used in gardening and many other purposes. Apart from this one big pond is also in the campus.

(iv) The college has optimized its irrigation system at night or early morning hours to minimize evaporation for gardening.

(v) Water escaping from overflows either inside or outside building was not identified during onsite audit.

5.5.2 Energy Management Practices

- Electric Load = 80 KW
- Daily Average Consumption= unit 334 kwh
- Electric Bill paid for the period of 2022-23 =Rs. 11,44,334

Electrical Items in the college	No. of Tubes	No. of CFL Light	No. of LEDs	No. of Fens Celling+wall+exhust	No. of LCD projector	No. of Computers +Printers	No. of photocopier	Common /sophisticated analytical equipments	No. of Ac
Total Electrical components used in the college campus	848	110	349	758	30	30	05	-	42

Observations:

i) There is minimum or practically negligible use of lights during day time as the building structure has possibility of daylight usage

ii) The lighting arrangements are well balanced with arrangements to switch ON and OFF

iii) The policy of college is switch off the lights and other electrical equipment when they are not in use.

iv) Cleanliness is well maintained. In- house light fittings are cleaned time to time.

v) Lights are negligibly operated during day time. The lights are operated manually. There is no any sensor-based lighting system

vi) The college is utilising natural lighting as first preference

vii) Computers, printers, photocopiers and other equipment are switched off at the end of the day.

viii) The all the electrical equipment is well operated. The overall electrification system is regularly monitored by a duly qualified electrician.

ix) Regarding the use of renewable energy college has installed solar panels and Solar street light also

x) College Management is evaluating the feasibility of introduction of the solar PV generation.

5.5.3 Waste Management Practices

Waste can be solid as well as liquid. Solid waste can be further divided into

(i) Biodegradable- Like food waste, Garden waste, waste from toilets etc.

(ii) Non-biodegradable-Like Plastics, tins, glassware etc.

Along with these, there are some hazardous wastes generated from laboratories, and E-waste (Computers, electric and electronic parts). Besides this, liquid waste is also there. The institute has over 4000 stakeholders which includes students, teaching staff and non-teaching staffs, thus a huge amount of waste is generated on a daily basis.

Sl/No.	Source	Type of waste	Approximate amount of waste generated per day
1.	Classroom, staff room, Library	Paper, pen, wrappers, plastic bottles etc	Biodegradable waste = 8.5 kg Non-biodegradable waste = 2.5 kg. Liquid waste= 9.5 kL E waste per annum = 90 kg
2.	Laboratories	Chemicals, glassware, waste water and solvents	
3.	Toilets	Sanitary napkins, waste water etc.	
4.	Canteen	Disposable plates, leftover food and water, wrappers, plastic bottles etc.	
5.	Office and computer centre	Papers, wrappers, plastics, paper pins, E-waste etc.	

Waste management practices adopted by the College

1. Solid waste generated in the campus
    - dry and wet waste are collected in dustbins with two chambers which are placed in the library, teachers' common room, canteen, lecture hall, near classroom etc.
    - Segregation of solid waste into dry and wet waste in different bins.
    - Specific waste management plans are adopted to manage solid waste in the campus. College has tie-up with Guwahati Municipal Corporation (GMC) and the generated solid waste is managed with help of GMC.
    - E-waste includes malfunctioning computer monitors, printers, scanners, calculators, keyboards, mouse, cables, circuit boards, bulbs etc. generated from campus is subjected to handover E-waste authorised agency
2. Toilet waste
    - Soak pits are available in toilets
    - Toilet waste is connected to large tanks. These tanks are cleaned periodically.
3. Other waste
    - Sanitary napkins are subjected to burn in the incinerator.
    - Leaf litters and organic waste are used in the vermicomposting unit
    - Waste like broken bulbs, tubes etc. which cannot be repaired are dumped temporarily at the dumping bin and later on disposed of to the municipality collection van.

Vermicomposting unit at Prgjyotish College Campus

6.0 Carbon footprint due to Transport System

Emission of CO_2 through transport system – both public and private – is very high in India as India is credited with the third rank in carbon emission in this regard. It is estimated that in India, 9% of the total carbon is emitted by the transport system.

In Pragjyotish College during survey it was observed that on an average, there are 51 number of four wheelers are used by faculty while 156 number of two wheelers are used by students and staff. Further very few students use bicycles. It is appropriate to calculate the petrol consumption separately for four wheelers and two wheelers.

The fuel consumption by vehicles is determined by the type of vehicle, year of manufacturing, maintenance status, traffic system of the particular area, etc. High-end and medium-range bikes consume different quantities of petrol.

Conversion table to calculate carbon emission by vehicles per litre is very complicated in view of the local variables to be taken for calculation. Instead, a simple but universally accepted calculation calendar for various types of fuels and their CO_2 conversion rate was adopted.

6.1 Emissions of CO_2 by transport system at Pragjyotish College

It is estimated that the average mileage covered by each vehicle is about	10 km.
The total mileage covered by the 150 number of two wheelers per year	(156 × 10 × 200) = 312000 km
The average mileage covered by four wheelers is also the same	8 km per day
The total mileage covered by 49 four wheelers per year	(51 ×8 × 200) = 81600 km
The total mileage covered by two and four wheelers per year	(312000+ 81600) = 393600km
The standard fuel consumption for two wheelers is taken	35 km / 1L of Fuel
The standard fuel consumption for Four wheelers is taken	15 km / 1L of Fuel
The total quantity of petrol consumed by 156 number Two Wheelers	(312000 /35) = 8914 L
The total quantity of fuel consumed by 51 number four wheelers per year	(81600/15) = 5440 L
The total fuel consumption per year (Two+ Four) Wheelers	(8914 + 5440) = 14354 L
Combustion of 1 litre of diesel/petrol leads to the emission of CO_2	2.68 kg
The total quantity of CO_2 emitted by 13798 litres of fuel per year	(14354 × 2.68) = 38468 kg

6.2 Flora and Carbon Footprint Reduction

Carbon Absorption Capacity of Flora at Pragjyotish College

The carbon footprint calculation is based on the following standard accepted assumptions

- Carbon absorption capacity of one full grown tree = 6.8 kg CO_2
- Carbon absorption capacity of one semi grown tree = 3.4 kg CO_2
- Carbon absorption capacity of one Shrubby vegetation = 0.2 kg CO_2

Total CO_2 absorption Capacity of Flora

Type of Tree	Total No. of Tree	Amount of CO_2 absorption/ tree (kg)	Total CO_2 absorption (kg)
Full Grown	145	6.8	986
Semi Grown	72	3.4	245
		Total amount of carbon absorption by Flora	**1231**

6.3 Oxygen Emission Capacity of Flora at Pragjyotish College

The carbon footprint calculation is based on the following standard accepted assumptions

- Oxygen Emission capacity of one full grown tree = 117.6 kg O_2
- Oxygen Emission capacity of one semi grown tree = 58.8 kg O_2
- Oxygen Emission Capacity of 400 number of Shrubby vegetation = 550 kg O_2

Type of Tree	Total No. of Tree	Amount of O_2 Emission / tree (kg)	Total O_2 Emission (kg)
Full Grown	145	117.6	17052
Semi Grown	72	58.8	4234
		Total amount of Oxygen Emission by Flora	21286

6.4 Summary of Carbon Footprint Reduction at Pragjyotish College

Carbon Absorption Capacity of Flora	1231 kg
Oxygen Emission Capacity of Flora	**21286** kg
The total quantity of CO_2 emitted by vehicles	38468 kg

6.5 Summary of Carbon Footprint per person at Pragjyotish College

Total Carbon Footprint in Tonnes	:	38.5
Total Carbon Footprint in kg	:	38468
Total Average number of persons in the College	:	3800
Carbon emission per person in kg	:	38468/3800 = 10.1
Carbon emission per person in kg	:	10.1 kg

7.0. Organizational effort

S/N	Items	Responses
Organizational effort		
1	Is the college having campus green team?	Yes. Copy Attached
2	Have you established an environmental mission/vision for your campus	Yes. College has established Environment to make the students and teachers aware about the environmental issues and challenges. The college has organized several programmes addressing environmental awareness among students and community as well (e.g. World Wetland Day, 2nd February; World Environment Day, 5th June; World Wild-life Conservation Day, 4th December; World Soil Day 5th December).
3	College initiates any tree plantation programme	Yes. programme organized within and outside the college campus particularly on College Foundation Day and World Environment Day (5th June)
4	How may numbers of existing tree, shrubs and herbs species	Tree- 145, Shrubs- 72
5	How may numbers of existing full-grown tree, semi grown trees	Full Grown - 145 Semi Grown – 72
6	Is there any lawn in the college campus? If yes what is area	Yes

7	Is the college encouraging sustainable behaviour via: Education campaigns? Such as Posters, placards, Messages, incentives? Contests? awards?	Yes, College organized various programme encouraging sustainable behaviour such as World Environment day (5th June), World Wetlands day (2nd February), National Science day (28th February), International Yoga Day (21st June), World AIDS Day(1st December), No Tobacoo Day (31st May), Ekta Divas (31st October) ; Wildlife Conservation Day (4th December); World Soil Day (5th December) and many more.
8	Is the college staff modelling sustainable behaviour for students, peers, and community?	Yes. Various community development works in terms of education, health & hygiene, environmental education etc. has been initiated.
9	Is the college having solar, wind, or other forms of renewable energy?	Yes. Planning for solar PV generation
10	What are the good practices pertaining to Transport?	Encourage the use of public transport, Bicycle and Zero vehicle movement in the college campus atleast one day in a week.
11	What is the average number of vehicle movements in terms of two & Four wheelers	Two Wheelers: 145 - 160 Four Wheelers: 40 – 54
12	Has the college initiated to reduce its carbon footprint	Yes, College has taken several initiatives to reduce total carbon footprint amount within the college campus.
13	Has the college adopted any specific measures to reduce pollution	To motivate students, social service competitions are being held on special occasion such as college week, environment day, Science Day, Azadi ka Amrit Mahotsav etc., where they are awarded for their active participation.

Celebration of World Environment Day in the College Campus

Clean Drive at bank of the river Brahmaputra by student of Pragjyotish College

Rain water harvesting Unit and Street Solar Light

8.0 Recommendations

Water Management

(i) The college Management needs to consider the low - flow faucets, as the replacement for the existing conventional taps.

(ii) The toilet and wash room should be equipped with push button

(iii) Sprinkler and drip irrigation should use for gardening

(iv) The college should install more rain water harvesting unit to cater the need of the college as well as to save ground water

(v) More advanced water purification treatment facilities may be installed within the campus in order to ensure safe drinking water.

Energy Management

- The public lights within the campus may be run with solar panels and the existing capacity of the solar panels should increase. Authority should take action to replace the existing lights with LED lamps.
- Energy auditing should be done with the help of Energy Management Centre (EMC)

Waste Management

- Specific waste management plans should be adopted to manage solid waste in the campus, use of plastic carry bags, plastic glass/ cups/plates and flex boards should be banned inside the College to create a plastic free zone.
- For managing organic wastes, the existing vermicompost plant may be improved in organised way
- There should be a proper system for the management of hazardous wastes.
- ETP and STP should install in the campus properly

Green Management

- Green habitat concept should be adopted for all the building construction activities of the college in future, which may help a long way in reducing energy usage, increasing aesthetic appeal of the buildings and class rooms, besides reducing carbon foot print.
- Further, more green spaces should be established all around the campus around larger trees and shades for the benefit of the students. All these aspects should monitor by Green Campus Committee.
- Air quality, drinking water quality should monitor annually.

****

ANNEXURE

Annexure 1 : Scanned copy of Green Campus Committee of Kanya Mahavidyalaya
Annexure 2 : Scanned copy of electric bill paid receipt
Annexure 3 : Scanned copy of ISO Certificate
Annexure 4 : Scanned copy of PCB Certificate
Annexure 5 : Scanned copy of MSME Certificate

OFFICE OF THE PRINCIPAL

PRAGJYOTISH COLLEGE

GUWAHATI – 781 009

Email: pragcollege@yahoo.co.in Website: www.pragjyotishcollege.org.in

Fax & Telephone: 0361-2544531

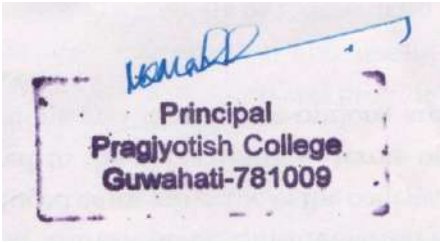
Dated: 28.02.2019

A Committee is constituted with the following faculty members to undertake a **Green Audit** for the college.

Members of the Green Audit Committee:

1. Dr. Manoj Kumar Mahanta, Principal , Chairperson
2. Dr. Jyoti Prasad Das, Convener (Department of Geography)
3. Amit Kumar Pradhan, Member (Department of Botany)
4. Bhrigu Kumar Nath (Department of Geography)
5. Himadri Saikia, Member (Department of Botany)

The Committee will continue until further orders from Authority.



Assam Power Distribution Company Limited

NAME OF ELECTRICAL SUB-DIVISION / IRCA : FATASIL ESD / IRCA GEC-I
CIN: U40109AS2003SGC007242
GSTIN: 18AABCL1354J1ZJ
ELECTRICITY BILL

Web: www.apdcl.org

Centralized Customer Care Number: 1912

Consumer Name: THE PRINCIPAL, PRAGJYOTISH COLLEGE
Address: SANTIPUR GUWAHATI 9 GUWAHATI

Contact Number: 9864045782
Email: Pragcollege@yahoo.co.in
Tariff Category: HT I/V BULK SUPPLY (GOVERNMENT EDUCATION)
Supply Voltage Level: Supply Voltage Level 11 KV

Consumer Number: 906000002737

Old Consumer Number: 63000001300
DTR Number: 2171
Pole Number: 000
Connected Load in KW: 80.0
Contracted Demand in KVA: 94.11
Load Security:175460.000
Meter Number: 21102465

Bill Amount: 160620.000

Due Date: 23-Sep-2023
Bill Number:900114463
Bill Period: 01-Aug-2023 To 31-Aug-2023
Bill Date : 08-Sep-2023
Number of Days: 31
Meter Status: RUNNING
Billing Status: NORMAL

906000002737

Meter Reading Details

Reading Type	Meter Number	MF	Previous Reading in KWh	Previous Export in KWh	Current Reading in KWh	Current Export in KWh	Difference Reading in KWh	Difference Export in KWh
kWH(Normal)	21102465	30.0	4824.330	0.000	5414.230	0.000	589.900	0.000

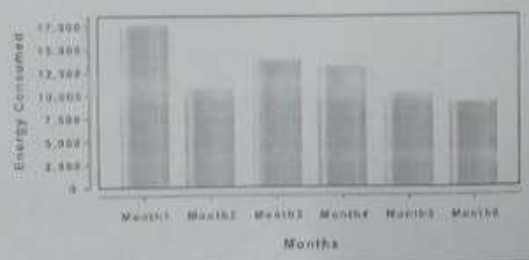
Units Consumed	PF Penalty/Rebate	LT Metering Penalty	DTR Penalty	HT Rebate	Voltage Rebate	Voltage Penalty	Billable Units in KWh
Normal (17697.0	-646.840	530.910	0.000	0.000	0.000	0.000	17681.070
Recorded Demand (in KVA)	2.71	Maximum Demand (in KVA)	81.17	Billing Demand (in KVA)	94.11	Average Power Factor	98.500
Power on Hours	743	**Freeze Amount**	**0.0**	**Oxygen Plant Rebate**	**0.00**	Availability Percentage	

Billing Details

Current Demand	Outstanding Amount	Adjustment Amount	Solar Rebate	Net Bill Amount
Rs. 160619.640	Rs. 0.000	Rs. 0.000	0.000	**Rs. 160620.000**
				In Words: Rupees One Lakh Sixty Thousands Six Hundred Twenty Only

PLEASE PAY YOUR BILL ON TIME AND HELP US TO SERVE YOU BETTER

Energy Consumption (Last Month's Bill)



Charges Breakup			
Details	Units	Rate	Amount
Energy Charge(Normal)	17681.070	7.150	126419.650
Total Energy Charge			126419.650
Energy Charge Re-Estimated			0.000
Rooftop Solar Adjustment			0.000
Demand/Fixed Charge (KVA)	94.11	150.0	14370.41
FPAA Charge		0.70	12376.75
Electricity Duty			7039.5
Govt. Subsidy		0.0	0.0
Overdrawal Penalty			0.0
Meter Rent		400.0	413.33
Charges for dishonoured cheque			0.0
Arrear Principal			0.000
Arrear Surcharge			0.000
Current Surcharge			0.000
Adjustment Amount			0.000
Rebate if paid before due date			**0.00**
Payable amount before due date			**160620.00**
Payable amount after due date			**160620.00**

Checked by E&OE

Prepared by: 40008501

Signature with seal

Integral Certification (P) Ltd.

Certificate OF REGISTRATION

This is to Certify that the Management System of

ENVIRO TESTING SERVICES

BIJAY NAGAR, NOONMATI, GUWAHATI - 781020, ASSAM, INDIA

has been found to conform to the Environmental Management System standard:

ISO 14001:2015

This certificate is valid for the following scope of operations:

ENVIRONMENTAL ASSESSMENT, MANAGEMENT, GREEN AUDIT AND ENVIRONMENTAL AUDIT

Certificate No.: IN19503B

Date of initial registration	*Date of this Certificate*	*Surv. audit on or before/ Certificate expiry*	*Recertification Due*
08 February 2023	*08 February 2023*	*07 February 2024*	*07 February 2026*

This Certificate remains valid subject to satisfactory surveillance audits.

Accreditation

EGAC Accredited EMS Certification CAB # 011201

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

Director

ICL/FM-001/REV06

For verification and updated information concerning the present certificate visit to www.iclcert.com

This certificate is property of Integral Certification (P) Ltd. and shall be returned immediately when demanded.

Integral Certification (P) Ltd.
301, U-60 (3rd Floor), Shakar Pur, Laxmi Nagar, Delhi-110092
E-mail: info@iclcert.com Website : www.iclcert.com
Contact No. : +91-9319332223

Integral Certification (P) Ltd.

Certificate OF REGISTRATION

This is to Certify that the Management System of

ENVIRO TESTING SERVICES

BIJAY NAGAR, NOONMATI, GUWAHATI - 781020,
ASSAM, INDIA

has been found to conform to the Quality Management System standard:

ISO 9001:2015

This certificate is valid for the following scope of operations:

ENVIRONMENTAL ASSESSMENT, MANAGEMENT AND MONITORING FOR SOIL, WATER, AIR, FLORA AND FAUNA.

Certificate No.: 09110783A

Date of initial registration	*Date of this Certificate*	*Surv. audit on or before/ Certificate expiry*	*Recertification Due*
24 August 2022	*24 August 2022*	*23 August 2023*	*23 August 2025*

Accreditation

This Certificate remains valid subject to satisfactory surveillance audits.

EGAC Accredited QMS Certification CAB # 112001

IAF MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT

Director

ICL/FM-001/REV06

For verification and updated information concerning the present certificate visit to www.iclcert.com

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E-mail: info@iclcert.com Website : www.iclcert.com
Contact No. : +91-9319332223

Pollution Control Board, Assam
(Department of Environment & Forests : : Government of Assam)
অসম প্রদূষণ নিয়ন্ত্রণ পৰিষদ
(অসম চৰকাৰৰ বন আৰু পৰিবেশ বিভাগ)

No.WB/GUW/T-2445/13-14/200 2722

Dated Guwahati the 09th March, 2023

OFFICE ORDER

In exercise of the powers conferred under section 17(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 17(2) of the Air (Prevention & Control of Pollution) Act, 1981, the Pollution Control Board, Assam is pleased to renew the recognition of the Laboratory for a period of six (6) months in favour of **M/s. Enviro Testing Services, Bijoy Nagar, House No. 35, Noonmati, Guwahati-22, Kamrup (M), Assam** awarded vide Pollution Control Board, Assam order No. WB/GUW/T-2445/13-14/198 dtd.19.02.2022. This Renewal of recognition is awarded subject to the following terms & conditions for the purpose of analyzing certain parameters discharged from the industries or any other institutions.

Terms & Conditions:

1. The recognition shall be valid till 08th September, 2023.
2. The recognition may be revoked or withdrawn subject to the violation of the following conditions :-
   - i. The laboratory shall carry out analysis only for the parameters authorized by the Board as mentioned in the certificate of approval.
   - ii. The laboratory shall carry out analysis of samples as per IS, APHA code of Federal Regulation and should specify the method in the analysis report.
   - iii. The laboratory will keep a proper record of receipt of samples, the reading of each and every parameter analyzed and calculation of results of all parameters on permanent register and will subject to inspect by the Board.
   - iv. The samples collected should be analyzed within seven (7) days from the date of collection and copy of the same along with the brief inspection report to be sent to Pollution Control Board, Assam.
   - v. The accredited laboratory will collect samples as required by the process, which will be divided in two parts. One part will be analyzed, while the other part will be preserved for thirty days. For air samples, the used thimbles and filter papers will be preserved for six (6) months so that the Board can check randomly and verify the credibility.
   - vi. The Board officials may visit laboratory for checking preserved samples at random.
   - vii. The Laboratory must submit information on whether ETPs/APCDs installed by the respective unit was running or not along with test report. At the time of collection samples by the Laboratory, all the processes of the unit should invariably be running. The analysis report should generally reflect site conditions and capacity at which the industry was running at the time of sampling.
   - viii. Records pertaining to inventory of the chemicals/ reagents shall be kept properly on a permanent register and will be subject to inspection by the Board.
   - ix. Laboratory will submit details of staff involved in sampling and testing and the person coming for collection of sample should have authority letter of Laboratory.
   - x. Any change in address, staff or other additions/ alterations in the facilities of the laboratory should immediately be reported to this office within fifteen (15) days.

Contd....p/2

মাইনু 43

xi. *Prior information is to be given* to the concerned Regional Officers and Head Office for collection of sample and Regional Officers/Field Officer will associate during the sampling.

xii. **The approval shall be suspended or cancelled if the Board has reason to believe that the data reported by the Laboratory is repeatedly erroneous. Further the Laboratory and its key personnel shall be liable to be proceeded against for imposition of penalty in case the Board has reason to believe that the data reported by the Laboratory is intentionally manipulated.**

xiii. If it is found that the aforementioned Laboratory has any involvement with any of the industry against whom allegations have been made forging of Board's Authority, will result in withdrawal of recognition apart from other legal proceeding as provided under existing laws.

xiv. If the laboratory failed to achieve the satisfactory performance regarding testing of the coded samples supplied by the Pollution Control Board, Assam will result in withdrawal of recognition.

xv. The instruments/equipment should be always kept in working and perfectly calibrated condition.

xvi. The Laboratory has to submit a brief plan on safety measures undertaken for risk management pertaining to the work environment.

xvii. **In legal matters, the analytical reports of the above laboratories will not be binding to the Board and such reports generated by the State Board will always prevail over.**

xviii. **Regarding compliance of occupiers, Boards analytical report and opinion will stand final over the reports and opinion of the aforesaid laboratory.**

xix. Board will have every right to accept or reject the analytical and other reports submitted by the aforesaid laboratory without assigning any reason thereof.

xx. **National Accreditation Board for Testing and Calibration Laboratories (NABL) is mandatory at the time of Next renewal of recognition i.e from the year 2023 onward.**

3. This order will remain valid for **six (6) month with effect from the date of issue of this order** subject to the outcome of Hon'ble Gauhati High Court Order in WP(C)/8468/2018. But the said recognition may also be withdrawn at any time in case of violation of any of the aforementioned conditions or any of the conditions mentioned in **Annexure-A(i) & (ii)** or for any other unlawful activities, which are not proper under the law of the land.
4. This order has been passed as per the approval of the Competent Authority.

(Shantanu Kr. Dutta)
Member Secretary

Memo No.WB/GUW/T-2445/13-14/200-A 2722 Dated Guwahati the 09th March, 2023

Copy to:

1. The ACES, Central Laboratory, PCBA for information and necessary action.
2. *M/s. Enviro Testing Services, Bijoy Nagar, House No.35, Noonmati, Guwahati-22, Kamrup (M)* for information and necessary action.

Member Secretary

Annexure-A

LIST OF PARAMETERS MENTIONED BELOW:-

A. Water & Waste Water

Sl. No	Parameters	Sl. No	Parameters
1	pH	27	Ammonical Nitrogen
2	Temperature	28	TKN
3	TSS	29	Phosphate
4	Zinc	30	Iron
5	BOD	31	Lead
6	COD	32	Copper
7	Total Dissolved Solids	33	Nickel
8	Chloride	34	Cr (Total & Hexa)
9	Sulphate	35	Cadmium
10	Oil & Grease	36	Aluminium
11	Sodium	37	Manganese
12	Phenol	38	Arsenic
13	Odour	39	Insecticides
14	Turbidity	40	Total Acidity
15	Alkalinity	41	DO
16	Conductivity	42	Cobalt
17	Total Hardness	43	Vanadium
18	Calcium hardness	44	Molybdenum
19	Magnesium Hardness	45	Silver
20	Nitrate	46	Hydrazine
21	Sulphite	47	Barium
22	Fluoride	48	Colour
23	Residual Chloride	49	Anionic Detergent
24	Boron	50	Mercury
25	Free Ammonia	51	Selenium
26	Sulphide	52	Nitrite

B. Bacteriology & Bio-Assay

Sl. No	Parameters
1	Total Coliform
2	Fecal Coliform

C. Noise Parameter

Noise Level Monitoring - Noise in dB(A)

Addl. Chief Env. Scientist
Pollution Control B[illegible]
Bamunimaidam, G[illegible]

D. Ambient Air Parameters

Sl. No	Parameters	Sl. No	Parameters
1	Oxides of Sulphur	8	Benzene
2	Oxides of Nitrogen	9	Benzo (a) Pyrine
3	PM 10	10	Arsenic
4	PM 2.5	11	Nickel
5	Ozone	12	Total Hydrocarbon
6	Lead	13	Formaldehyde
7	Carbon Monoxide	14	Ammonia

E. Stack Parameters

Sl. No	Parameters	Sl. No	Parameters
1	Oxides of Sulphur	7	Nickel
2	Oxides of Nitrogen	8	Hydrogen Sulphide
3	Particulate Matter	9	Carbon Dioxide
4	Oxygen	10	Hydrogen Fluoride (HF)
5	Carbon Monoxide	11	Vanadium
6	Hydrochloric Acid Vapour & Mist (HCl)	12	Chlorine

F. Parameters For Soil Analysis

Sl. No	Parameters	Sl. No	Parameters
1	pH	9	Phosphorous
2	Soil Type	10	Manganese
3	Water Holding Capacity	11	Nitrogen
4	Iron	12	Sodium
5	Organic Matter	13	Potassium
6	Copper	14	SAR
7	Nickel	15	Boron
8	Chlorides	16	Zinc

G. Fugitive Emission (LEL-CH_4),

Light Intensity (Lux Meter),
VOC

H. Work Zone Monitoring

I. Waste Sludge Parameters (Non Hazardous & Hazardous)

Monoj Laikin
Addl. Chief Env.
Pollution Control B
Guwahati, Gu

भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small and Medium Enterprises

सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER — **UDYAM-AS-16-0015132**

NAME OF ENTERPRISE — **ENVIRO TESTING SERVICES**

TYPE OF ENTERPRISE *

SNo.	Classification Year	Enterprise Type	Classification Date
1	2023-24	Micro	29/04/2023

MAJOR ACTIVITY — **SERVICES**

SOCIAL CATEGORY OF ENTREPRENEUR — **GENERAL**

NAME OF UNIT(S)

S.No.	Name of Unit(s)
1	ENVIRO TESTING SERVICES

OFFICAL ADDRESS OF ENTERPRISE

Flat/Door/Block No.	-	Name of Premises/ Building	BIJOY NAGAR,
Village/Town	Kamrup,	Block	-
Road/Street/Lane	NOONMATI,	City	Assam,
State	ASSAM	District	KAMRUP , Pin 781020
Mobile	9435732705	Email:	envirotesting2011@gmail.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE — **15/12/2001**

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS — **15/12/2001**

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

SNo.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	70 - Activities of head offices; management consultancy activities	7010 - Activities of head offices	70100 - Activities of head offices	Services
2	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70200 - Management consultancy activities	Services
3	71 - Architecture and engineering	7110 - Architectural and engineering	71100 - Architectural and engineering	Services

	activities; technical testing and analysis	**activities and related technical consultancy**	**activities and related technical consultancy**	
4	**71 - Architecture and engineering activities; technical testing and analysis**	**7120 - Technical testing and analysis**	**71200 - Technical testing and analysis**	**Services**
5	**74 - Other professional, scientific and technical activities**	**7490 - Other professional, scientific and technical activities n.e.c.**	**74904 - Security consulting**	**Services**

DATE OF UDYAM REGISTRATION **29/04/2023**

*** In case of graduation (upward/reverse) of status of an enterprise, the benefit of the Government Schemes will be availed as per the provisions of Notification No. S.O. 2119(E) dated 26.06.2020 issued by the M/o MSME.**

Disclaimer: This is computer generated statement, no signature required. Printed from https://udyamregistration.gov.in & Date of printing:- 29/04/2023

For any assistance, you may contact:

1. District Industries Centre: **DIC KAMRUP (ASSAM)**

2. MSME-DFO: **GUWAHATI (ASSAM)**